



## CHANGE REQUEST

# 25.401 CR 94 # rev 1 # Current version: 6.4.0 #

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**Proposed change affects:** UICC apps#  ME  Radio Access Network  Core Network

<b>Title:</b>	# Introduction of E-DCH		
<b>Source:</b>	# RAN3		
<b>Work item code:</b>	# E-DCH-lublur	<b>Date:</b>	# 15/11/2004
<b>Category:</b>	# <b>B</b>	<b>Release:</b>	# Rel-6
	Use <u>one</u> of the following categories: <b>F</b> (correction) <b>A</b> (corresponds to a correction in an earlier release) <b>B</b> (addition of feature), <b>C</b> (functional modification of feature) <b>D</b> (editorial modification) Detailed explanations of the above categories can be found in 3GPP <a href="#">TR 21.900</a> .		Use <u>one</u> of the following releases: Ph2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) Rel-4 (Release 4) Rel-5 (Release 5) Rel-6 (Release 6) Rel-7 (Release 7)

<b>Reason for change:</b>	# Introduction of E-DCH		
<b>Summary of change:</b>	# E-DCH feature is introduced.		
	- Section 3.2: E-DCH was added as abbreviation - Section 6.1.7: E-RNTI is added as new UE identifier. - Section 11.2.xx : new section "E-DCH Transport Channel" was added		
<b>Consequences if not approved:</b>	# E-DCH function will not work.		

<b>Clauses affected:</b>	# 3.2, 6.1.7, 11.2.xx(new)						
<b>Other specs</b>	<table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="text-align: center;">X</td> <td></td> </tr> </table> Other core specifications	Y	N	X		#	25.420 v 6.1.0 CR 45 25.423 v 6.3.0 CR 1007 25.427 v 6.0.0 CR 95 25.430 v 6.2.0 CR 56 25.433 v 6.3.0 CR 1059
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<b>Affected:</b>	<table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td style="width: 20px; text-align: center;">X</td> <td>Test specifications</td> </tr> <tr> <td style="width: 20px; text-align: center;">X</td> <td>O&amp;M Specifications</td> </tr> </table>	X	Test specifications	X	O&M Specifications		
X	Test specifications						
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# 3GPP TS 25.401 V6.4.0 (2004-09)

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*Technical Specification*

## **3rd Generation Partnership Project; Technical Specification Group Radio Access Network; UTRAN overall description (Release 6)**



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Keywords

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UMTS, radio, access

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# Foreword

This Technical Specification (TS) has been produced by the 3<sup>rd</sup> Generation Partnership Project (3GPP).

The contents of the present document are subject to continuing work within the TSG and may change following formal TSG approval. Should the TSG modify the contents of the present document, it will be re-released by the TSG with an identifying change of release date and an increase in version number as follows:

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- z the third digit is incremented when editorial only changes have been incorporated in the document.



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# 1 Scope

The present document describes the overall architecture of the UTRAN, including internal interfaces and assumptions on the radio and Iu interfaces.

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# 2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

- [1] 3GPP TR 25.990: "Vocabulary".
- [2] 3GPP TS 23.110: "UMTS Access Stratum Services and Functions".
- [3] 3GPP TS 25.211: "Physical channels and mapping of transport channels onto physical channels (FDD)".
- [4] 3GPP TS 25.442: "UTRAN Implementation Specific O&M Transport".
- [5] 3GPP TS 25.402: "Synchronisation in UTRAN, Stage 2".
- [6] 3GPP TS 23.003: "Numbering, Addressing and Identification".
- [7] 3GPP TS 25.331: "RRC Protocol Specification".
- [8] 3GPP TS 23.101: "General UMTS Architecture".
- [9] 3GPP TS 25.414: "UTRAN Iu Interface Data Transport & Transport Signalling".
- [10] 3GPP TS 25.424: "UTRAN Iur Interface Data Transport & Transport Signalling for Common Transport Channel Data Streams".
- [11] 3GPP TS 25.434: "UTRAN Iub Interface Data Transport & Transport Signalling for Common Transport Channel Data Streams".
- [12] IETF RFC 2460: "Internet Protocol, Version 6 (Ipv6) Specification".
- [13] IETF RFC 2474: "Definition of the Differentiated Services Field (DS Field) in the IPv4 and IPv6 Headers " December 1998
- [14] IETF RFC 768: "User Datagram Protocol", (8/1980)
- [15] "Information technology – Open Systems Interconnection – Network service definition", X.213, ISO/IEC 8348.
- [16] "Information technology – Open Systems Interconnection – Network service definition Amendment 1: Addition of the Internet protocol address format identifier", X.213/Amd.1, ISO/IEC 8348.
- [17] IETF RFC 791 (1981): "Internet Protocol".
- [18] 3GPP TS 25.426: "UTRAN Iur and Iub Interface Data Transport & Transport Signalling for DCH Data Streams".

- [19] Void
- [20] 3GPP TS 23.236: "Intra-domain connection of Radio Access Network (RAN) nodes to multiple Core Network (CN) nodes".
- [21] 3GPP TR 43.930: "Iur-g interface; Stage 2".
- [22] 3GPP TR 44.901: "External Network Assisted Cell Change".
- [23] 3GPP TS 48.018: "General Packet Radio Service (GPRS); BSS GPRS Protocol (BSSGP)".
- [24] 3GPP TS 25.460: "UTRAN Iuant Interface: General Aspects and Principles".
- [25] 3GPP TS 25.461: "UTRAN Iuant Interface: Layer 1".
- [26] 3GPP TS 25.462: "UTRAN Iuant Interface: Signalling Transport".
- [27] 3GPP TS 25.463: "UTRAN Iuant Interface: Remote Electrical Tilting (RET) Antennas Application Part (RETAP) Signalling".

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## 3 Definitions and abbreviations

### 3.1 Definitions

For the purposes of the present document, the following terms and definitions apply:

**ALCAP:** generic name for the transport signalling protocols used to set-up and tear-down transport bearers

**Cell:** Radio Network object that can be uniquely identified by a User Equipment from a (cell) identification that is broadcasted over a geographical area from one *UTRAN Access Point*  
A Cell is either FDD or TDD mode.

**Iu:** interface between an RNC and an MSC, SGSN or CBC, providing an interconnection point between the RNS and the Core Network. It is also considered as a reference point

**Iub:** interface between the RNC and the Node B

**Iur:** logical interface between two RNCs

Whilst logically representing a point to point link between RNCs, the physical realisation need not be a point to point link.

**Iur-g:** logical interface between RNC/BSS and BSS

Whilst logically representing a point to point link between RNC/BSS and BSS, the physical realisation need not be a point to point link.

**Logical Model:** Logical Model defines an abstract view of a network or network element by means of information objects representing network element, aggregations of network elements, the topological relationship between the elements, endpoints of connections (termination points), and transport entities (such as connections) that transport information between two or more termination points

The information objects defined in the Logical Model are used, among others, by connection management functions. In this way, a physical implementation independent management is achieved.

**Node B:** logical node in the RNS responsible for radio transmission / reception in one or more cells to/from the UE  
The logical node terminates the Iub interface towards the RNC.

**Radio Resources:** resources that constitute the radio interface in UTRAN, e.g. frequencies, scrambling codes, spreading factors, power for common and dedicated channels

**Node B Application Part:** Radio Network Signalling over the Iub

**Radio Network Controller:** logical node in the RNS in charge of controlling the use and the integrity of the radio resources

**Controlling RNC:** role an RNC can take with respect to a specific set of Node B's

There is only one Controlling RNC for any Node B. The Controlling RNC has the overall control of the logical resources of its node B's.

**Radio Network Subsystem:** RNS can be either a full UTRAN or only a part of a UTRAN

An RNS offers the allocation and release of specific radio resources to establish means of connection in between an UE and the UTRAN. A Radio Network Subsystem contains one RNC and is responsible for the resources and transmission/reception in a set of cells.

**Serving RNS:** role an RNS can take with respect to a specific connection between an UE and UTRAN

There is one Serving RNS for each UE that has a connection to UTRAN. The Serving RNS is in charge of the radio connection between a UE and the UTRAN. The Serving RNS terminates the Iu for this UE.

**Drift RNS:** role an RNS can take with respect to a specific connection between an UE and UTRAN

An RNS that supports the Serving RNS with radio resources when the connection between the UTRAN and the UE need to use cell(s) controlled by this RNS is referred to as Drift RNS.

**Radio Access Network Application Part:** Radio Network Signalling over the Iu

**Radio Network Subsystem Application Part:** Radio Network Signalling over the Iur

**RRC Connection:** point-to-point bi-directional connection between RRC peer entities on the UE and the UTRAN sides, respectively

An UE has either zero or one RRC connection.

**Stand-Alone SMLC:** logical node that interconnects to the RNC over the Iupc interface via the PCAP protocol

This node provides GPS related data to the RNC and may perform the position calculation function.

**User Equipment:** Mobile Equipment with one or several UMTS Subscriber Identity Module(s)

A device allowing a user access to network services via the Uu interface. The UE is defined in ref. [8]. If this term is used in the context of Iur-g, it means MS in case it uses radio resources of a DBSS.

**Universal Terrestrial Radio Access Network:** UTRAN is a conceptual term identifying that part of the network which consists of RNCs and Node Bs between Iu and Uu

The concept of UTRAN instantiation is currently undefined.

**UTRAN Access Point:** conceptual point within the UTRAN performing radio transmission and reception

A UTRAN access point is associated with one specific *cell*, i.e. there exists one UTRAN access point for each cell. It is the UTRAN-side end point of a *radio link*.

**Radio Link:** "radio link" is a logical association between a single User Equipment and a single UTRAN access point. Its physical realisation comprises one or more radio bearer transmissions.

**Radio Link Set:** set of one or more Radio Links that has a common generation of Transmit Power Control (TPC) commands in the DL

**Uu:** Radio interface between UTRAN and the User Equipment

**RAB sub-flows:** Radio Access Bearer can be realised by UTRAN through several sub-flows

These sub-flows correspond to the NAS service data streams that have QoS characteristics that differ in a predefined manner within a RAB e.g. different reliability classes.

RAB sub-flows have the following characteristics:

- 1) The sub-flows of a RAB are established and released at the RAB establishment and release, respectively.
- 2) The sub-flows of a RAB are submitted and delivered together at the RAB SAP.
- 3) The sub-flows of a RAB are carried over the same Iu transport bearer.
- 4) The sub-flows of a RAB are organised in a predefined manner at the SAP and over the Iu interface. The organisation is imposed by the NAS as part of its co-ordination responsibility.

**Set of co-ordinated DCHs:** set of co-ordinated DCHs is a set of dedicated transport channels that are always established and released in combination

Individual DCHs within a set of co-ordinated DCHs cannot be operated on individually e.g. if the establishment of one

DCH fails, the establishment of all other DCHs in the set of co-ordinated DCHs shall be terminated unsuccessfully. A set of coordinated DCHs is transferred over one transport bearer. All DCHs in a set of co-ordinated DCHs shall have the same TTI.

**Shared Network Area (SNA):** Area consisting of one or more LA's to which access can be controlled.

## 3.2 Abbreviations

For the purposes of the present document, the following abbreviations apply:

AAL	ATM Adaptation Layer
AAL2	ATM Adaptation Layer 2
ALCAP	Access Link Control Application Part
ATM	Asynchronous Transfer Mode
BM-IWF	Broadcast Multicast Interworking Function
BMC	Broadcast/Multicast Control
BSS	Base Station Subsystem
CBC	Cell Broadcast Centre
CBS	Cell Broadcast Service
CN	Core Network
CPCH	Common Packet Channel
CRNC	Controlling Radio Network Controller
DCH	Dedicated Channel
DL	Downlink
DRNS	Drift RNS
<u>E-DCH</u>	<u>Enhanced UL DCH</u>
EDGE	Enhanced Data rates for Global Evolution
FACH	Forward Access Channel
FFS	For Further Study
GERAN	GSM EDGE Radio Access Network
GSM	Global System for Mobile Communications
GTP	GPRS Tunnelling Protocol
IPv4	Internet Protocol, version 4
IPv6	Internet Protocol, version 6
LA	Location Area
MAC	Medium Access Control
NACC	Network Assisted Cell Change
NAS	Non Access Stratum
NBAP	Node B Application Part
NNSF	NAS Node Selection Function
NSAP	Network Service Access Point
PCH	Paging Channel
PLMN	Public Land Mobile Network
QoS	Quality of Service
RAB	Radio Access Bearer
RACH	Random Access Channel
RANAP	Radio Access Network Application Part
RET	Remote Electrical Tilting
RIM	RAN Information Management
RNC	Radio Network Controller
RNL	Radio Network Layer
RNS	Radio Network Subsystem
RNSAP	Radio Network Subsystem Application Part
RNTI	Radio Network Temporary Identity
SAB	Service Area Broadcast
SAS	Stand-Alone SMLC
SMLC	Serving Mobile Location Centre
SNA	Shared Network Area
SRNC	Serving Radio Network Controller
SRNS	Serving RNS
TEID	Tunnel Endpoint Identifier

TNL	Transport Network Layer
TTI	Transmission Time Interval
UDP	User Datagram Protocol
UE	User Equipment
UL	Uplink
UMTS	Universal Mobile Telecommunication System
URA	UTRAN Registration Area
USIM	UMTS Subscriber Identity Module
UTRAN	Universal Terrestrial Radio Access Network

### 3.3 Notation

Parts of the document apply only to one mode, FDD or TDD. Any such area will be tagged by [FDD — xxxxxxxx] and [TDD — yyyyyyyyyy] respectively. The tag applies to the text until the closing bracket.

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## 4 General principles

The general principles guiding the definition of UTRAN Architecture as well as the UTRAN interfaces are the following:

- Logical separation of signalling and data transport networks.
- UTRAN and CN functions are fully separated from transports functions. Addressing scheme used in UTRAN and CN shall not be tied to the addressing schemes of transport functions. The fact that some UTRAN or CN function resides in the same equipment as some transport functions does not make the transport functions part of the UTRAN or the CN.
- Macro diversity (FDD only) is fully handled in the UTRAN.
- Mobility for RRC connection is fully controlled by the UTRAN.
- When defining the UTRAN interfaces the following principles were followed: The functional division across the interfaces shall have as few options as possible.
- Interfaces should be based on a logical model of the entity controlled through this interface.
- One Physical Network Element can implement multiple Logical Nodes.

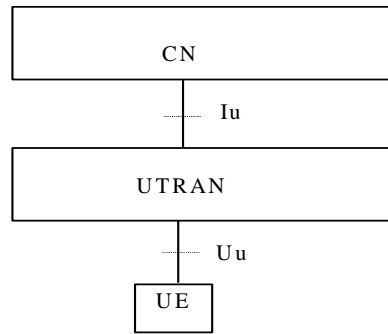
Transport Network Control Plane is a functional plane in the interfaces protocol structure that is used for the transport bearer management. The actual signalling protocol that is in use within the Transport Network Control Plane depends on the underlying transport layer technology. The intention is not to specify a new UTRAN specific Application Part for the Transport Network Control Plane but to use signalling protocols standardised in other groups (if needed) for the applied transport layer technology.

---

## 5 UMTS General architecture

### 5.1 Overview

Figure 1 shows a simplified UMTS architecture with the external reference points and interfaces to the UTRAN.



UTRAN UMTS Terrestrial Radio Access Network  
 CN Core Network  
 UE User Equipment

Figure 1: UMTS Architecture

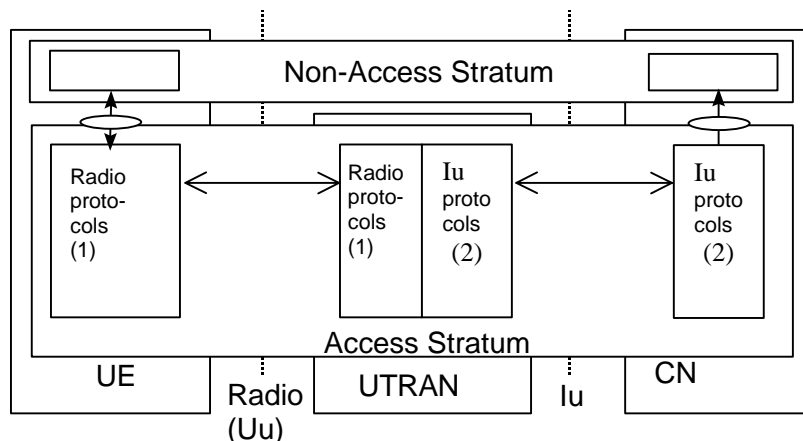
## 5.2 General protocols architecture

The protocols over Uu and Iu interfaces are divided into two structures:

- **User plane protocols**  
 These are the protocols implementing the actual radio access bearer service, i.e. carrying user data through the access stratum.
- **Control plane protocols**  
 These are the protocols for controlling the radio access bearers and the connection between the UE and the network from different aspects (including requesting the service, controlling different transmission resources, handover & streamlining etc.). Also a mechanism for transparent transfer of NAS messages is included.

### 5.2.1 User plane

The radio access bearer service is offered from SAP to SAP by the Access Stratum. Figure 2 shows the protocols on the Uu and Iu interfaces that linked together provide this radio access bearer service.

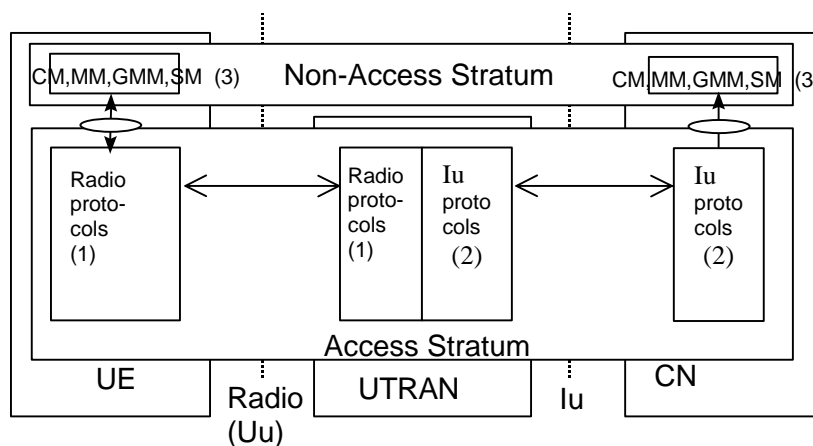


- (1) The radio interface protocols are defined in documents TS 25.2xx and TS 25.3xx.
- (2) The Iu interface protocols are defined in documents TS 25.41x.

Figure 2: Iu and Uu User plane

## 5.2.2 Control plane

Figure 3 shows the control plane (signalling) protocol stacks on Iu and Uu interfaces.



- (1) The radio interface protocols are defined in documents TS 25.2xx and TS 25.3xx.
- (2) The protocol is defined in documents TS 25.41x. (Description of Iu interface).
- (3) **CM, MM, GMM, SM:** This exemplifies a set of NAS control protocols between UE and CN. There may be different NAS protocol stacks in parallel. The evolution of the protocol architecture for these protocols is outside the scope of the present document.

**Figure 3: Iu and Uu Control plane**

NOTE: Both the Radio protocols and the Iu protocols contain a mechanism to transparently transfer NAS messages.

## 6 UTRAN Architecture

The UTRAN consists of a set of Radio Network Subsystems connected to the Core Network through the Iu.

A RNS consists of a Radio Network Controller one or more Node Bs and optionally one SAS. A Node B is connected to the RNC through the Iub interface.

A Node B can support FDD mode, TDD mode or dual-mode operation.

There are two chip-rate options in the TDD mode: 3.84 Mcps TDD and 1.28 Mcps TDD. Each TDD cell supports either of these options.

A Node B which supports TDD cells can support one chip-rate option only, or both options.

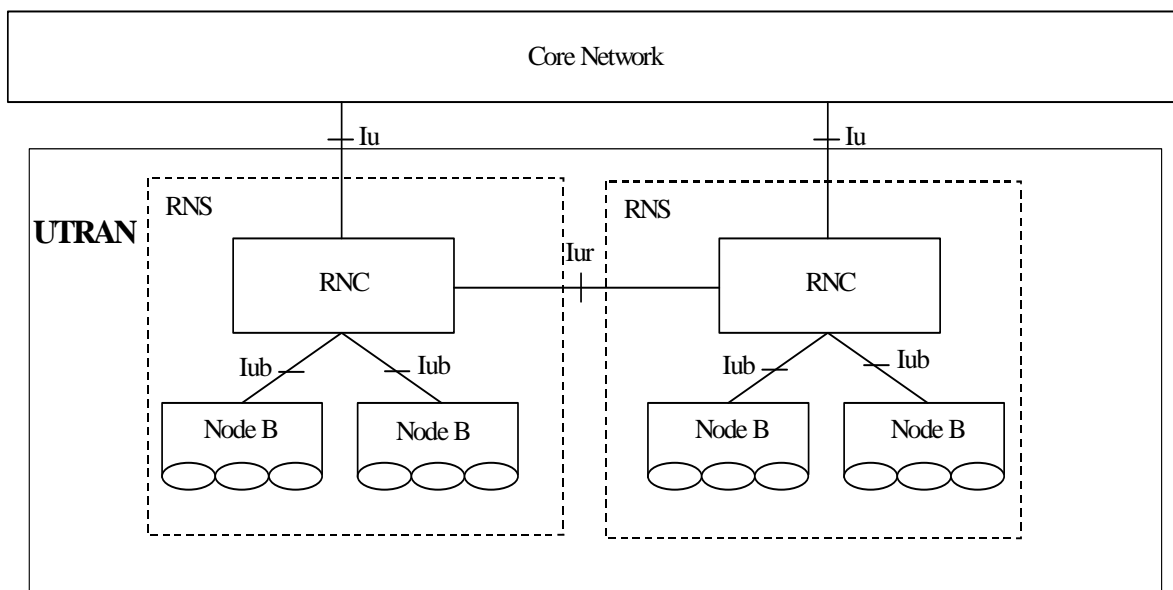
A RNC which supports TDD cells can support one chip-rate option only, or both options.

The RNC is responsible for the Handover decisions that require signalling to the UE.

A RNC may include a combining/splitting function to support combination/splitting of information streams (see subclause 7.2.4.3).

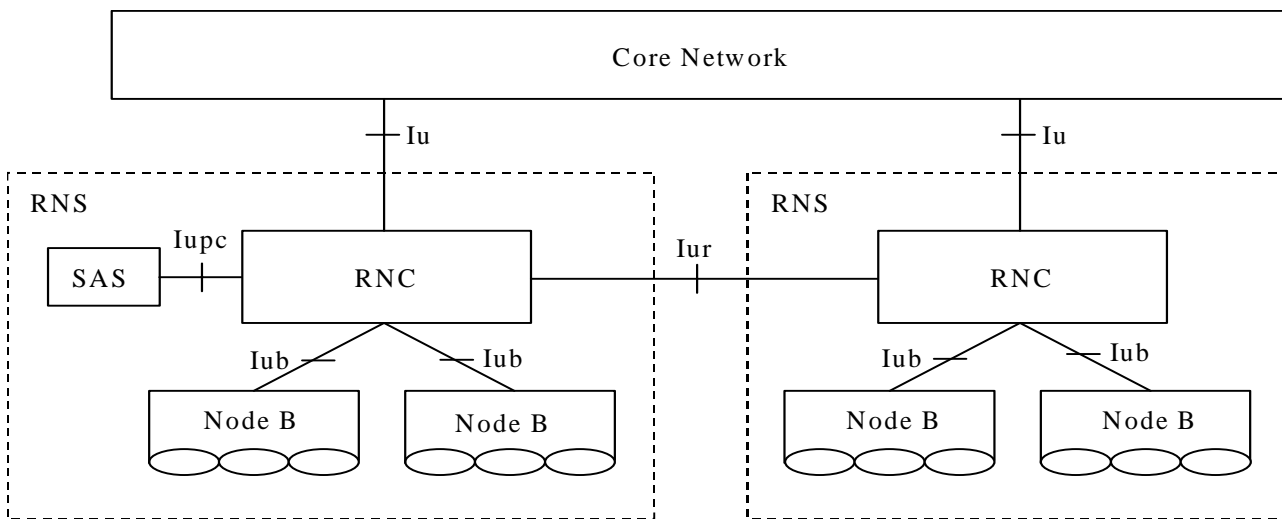
Inside the UTRAN, the RNCs of the Radio Network Subsystems can be interconnected together through the Iur. Iu(s) and Iur are logical interfaces. Iur can be conveyed over direct physical connection between RNCs or virtual networks using any suitable transport network.

The UTRAN architecture is shown in figure 4.



**Figure 4: UTRAN Architecture**

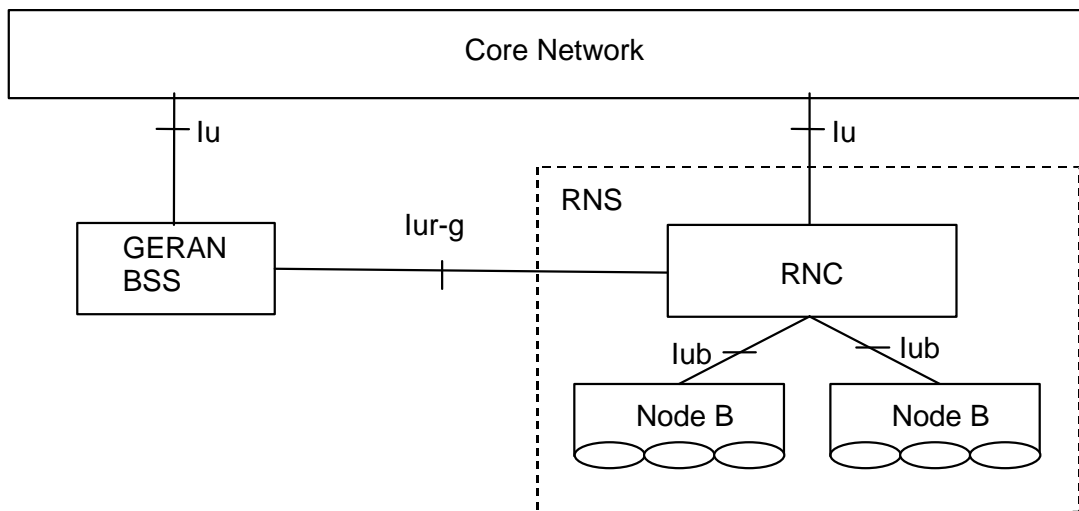
Regarding the UE positioning method, the RNC may have full internal support for this function and/or may be connected to one SAS via the Iupc interface. The following picture illustrates the resulting UTRAN architecture when the Iupc interface is adopted.



**Figure 4a: UTRAN Architecture with the Iupc option**

The RNC may be connected to BSS supporting GERAN Iu mode via the Iur-g interface. The following picture illustrates the UTRAN and GERAN Iu mode connection when the Iur-g interface is adopted.

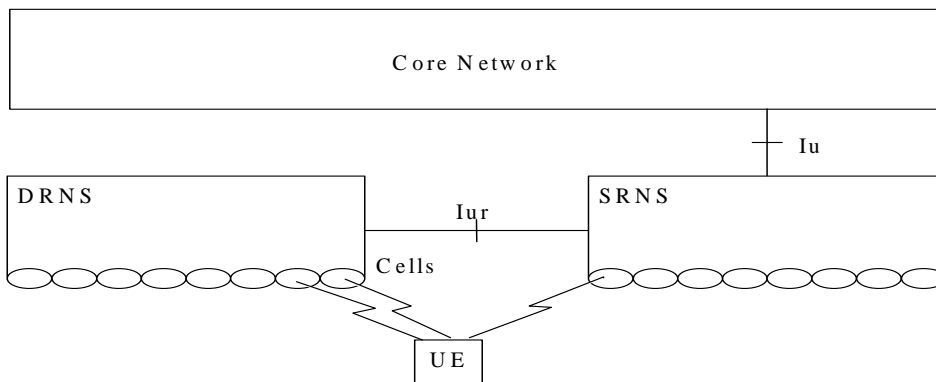




**Figure 4b: UTRAN and GERAN Iu mode connection with Iur-g**

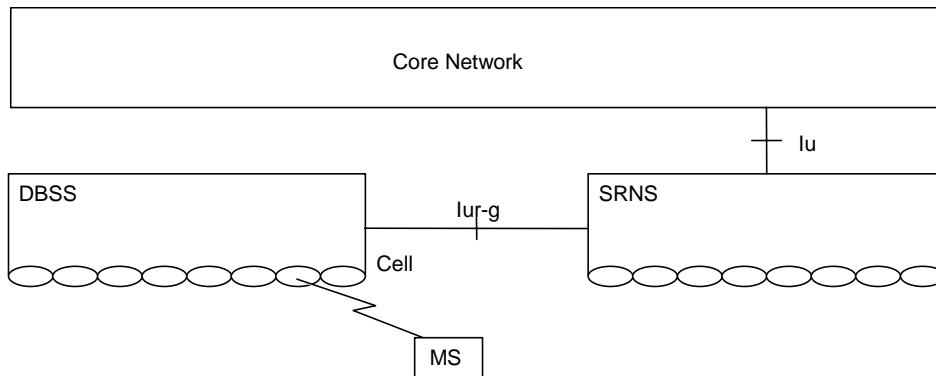
Each RNS is responsible for the resources of its set of cells.

For each connection between User Equipment and the UTRAN, One RNS is the Serving RNS. When required, Drift RNSs support the Serving RNS by providing radio resources as shown in figure 5. The role of an RNS (Serving or Drift) is on a per connection basis between a UE and the UTRAN.

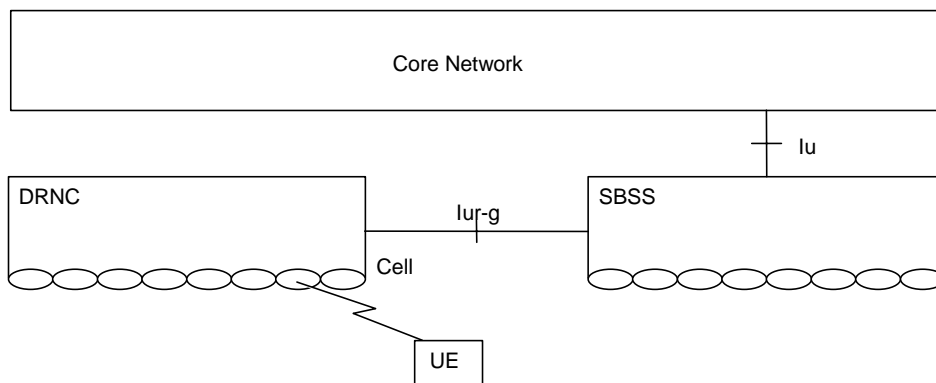


**Figure 5: Serving and Drift RNS**

To support UE mobility between UTRAN and GERAN Iu mode, the Serving RNS may be connected to the DBSS and vice versa as illustrated in figures 5x and 5y. The role of an RNS or BSS (Serving or Drift) is on a per connection basis between an UE and the UTRAN/GERAN Iu mode.



**Figure 5a: Serving RNS and Drift BSS**



**Figure 5b: Serving BSS and Drift RNS**

The UTRAN is layered into a Radio Network Layer and a Transport Network Layer.

The UTRAN architecture, i.e. the UTRAN logical nodes and interfaces between them, are defined as part of the Radio Network Layer.

For each UTRAN interface (Iu, Iur, Iub, Iupc) the related transport network layer protocol and functionality is specified. The transport network layer provides services for user plane transport, signalling transport and transport of implementation specific O&M.

An implementation of equipment compliant with the specifications of a certain interface shall support the Radio Network Layer protocols specified for that interface. It shall also as a minimum, for interoperability, support the transport network layer protocols according to the transport network layer specifications for that interface.

The network architecture of the transport network layer is not specified by 3GPP and is left as an operator issue.

The equipment compliant to 3GPP standards shall at least be able to act as endpoints in the transport network layer, and may also act as a switch/router within the transport network layer.

For implementation specific O&M signalling to the Node B, only the transport network layer protocols are in the scope of UTRAN specifications.

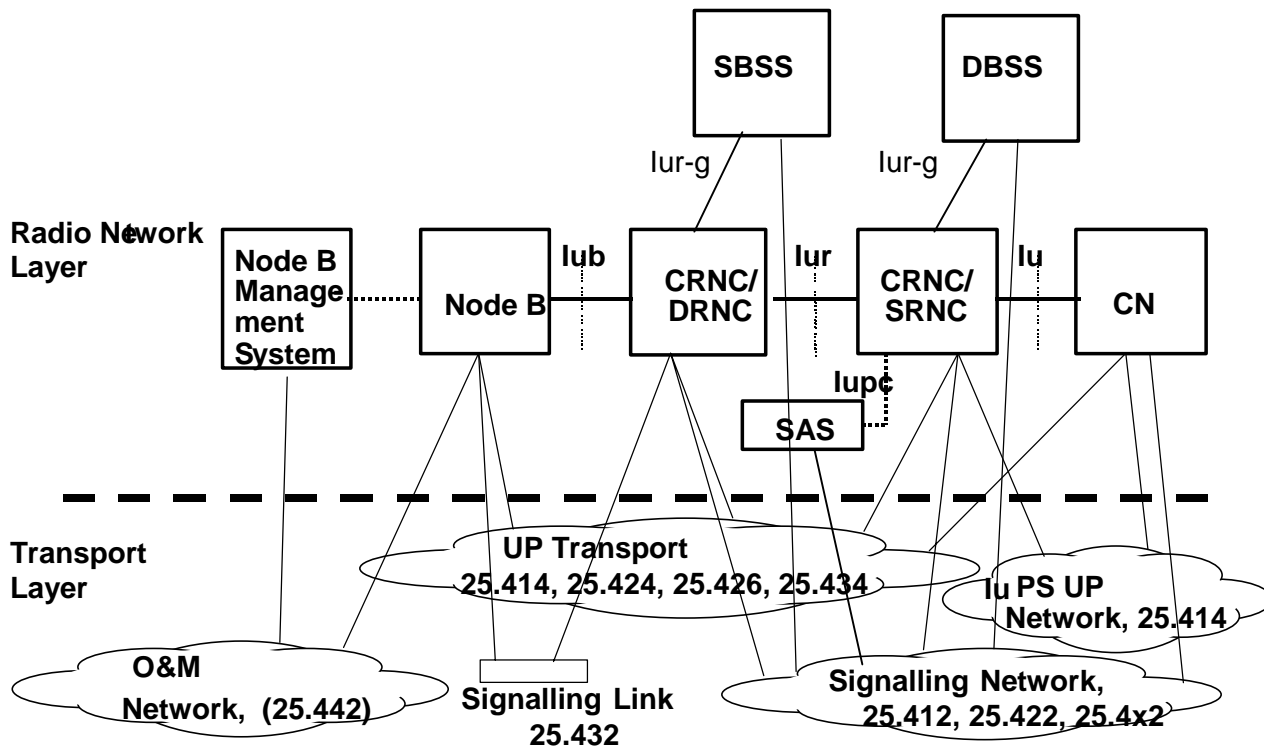


Figure 6: Protocol layering

Figure 6 illustrates which parts of the transport network layer that may be (but are not mandated to be) configured by the operator as transport networks, i.e. the radio network layer provides a destination address, namely:

- Transport network for implementation specific O&M traffic;
- Signalling network for Iu, Iur, Iur-g and Iupc;
- Transport network for Iub, Iur and Iu CS user plane connections;
- Transport network for Iu PS user plane connections.

The signalling link for Iub signalling as seen by the radio network layer cannot be configured as a network (no address provided).

A transport network for UTRAN may be configured by the operator to be used also for other traffic than UTRAN traffic.

## 6.1 UTRAN Identifiers

### 6.1.1 PLMN Identity

A Public Land Mobile Network is uniquely identified as define in [6] subclause 12.1.

### 6.1.2 CN Domain Identifier

A CN Domain Edge Node is identified as defined in [6] sub-clause 12.2.

### 6.1.3 RNC Identifier

An RNC node is uniquely identified by its RNC Identifier among the nodes in UTRAN and GERAN Iu mode as defined in [6] sub-clause 12.3. A BSS node in GERAN Iu mode is uniquely identified by its RNC Identifier among the nodes in GERAN Iu mode and UTRAN.

### 6.1.4 Service Area Identifier

The Service Area Identifier (SAI) is defined in [6] sub-clause 12.4.

### 6.1.5 Cell Identifier

The Cell identifier (C-Id) is used to uniquely identify a cell within an RNS/BSS. The Cell-Id together with the identifier of the controlling RNC/BSS (CRNC-Id) constitutes the UTRAN/GERAN Cell Identity (UC-Id) and is used to identify the cell uniquely within UTRAN/GERAN Iu mode. UC-Id or C-Id is used to identify a cell in UTRAN Iub and Iur interfaces or Iur-g interface.

- **UC-Id = RNC-Id + C-Id.**

The C-Id is defined by the operator, and set in the RNC/BSS via O&M. The C-Id is set in a Node B by its C-RNC or in the GERAN Iu mode cell.

### 6.1.6 Local Cell Identifier

The Local Cell identifier is used to uniquely identify the set of resources within a Node B required to support a cell (as identified by a C-Id). As a minimum it shall be unique within the Node B, but it is also capable of supporting uniqueness within the UTRAN for management system purposes.

The Local Cell Identifier is used for the initial configuration of a Node B when no C-Id is defined. The Local Cell identifier is defined by the operator, and set in both the Node B and its C-RNC via O&M. The relationship between the Local Cell Identifier and C-Id is set in the C-RNC via O&M.

### 6.1.7 UE Identifiers

Radio Network Temporary Identities (RNTI) are used as UE identifiers within UTRAN/GERAN Iu mode and in signalling messages between UE and UTRAN/GERAN Iu mode.

Six types of RNTI exist:

- 1) Serving RNC/BSS RNTI (s-RNTI);
- 2) Drift RNC/BSS RNTI (d-RNTI);
- 3) Cell RNTI (c-RNTI);
- 4) UTRAN/GERAN RNTI (u-RNTI);
- 5) DSCH RNTI (DSCH-RNTI);
- 6) HS-DSCH RNTI (HS-DSCH RNTI);

[\[FDD -](#)

[7\) E-DCH RNTI \(E-RNTI\);\]](#)

**s-RNTI is used:**

- by UE to identify itself to the Serving RNC/BSS;
- by SRNC/SBSS to address the UE/MS;
- by DRNC/DBSS to identify the UE to Serving RNC.

s-RNTI is allocated for all UEs having a RRC connection, it is allocated by the Serving RNC/BSS and it is unique within the Serving RNC/BSS. s-RNTI is reallocated always when the Serving RNC/BSS for the RRC connection is changed.

**d-RNTI is used:**

- by serving RNC/BSS to identify the UE to Drift RNC/BSS.

NOTE: The d-RNTI is never used on Uu.

d-RNTI is allocated by drift RNC/BSS upon drift UE contexts establishment and it shall be unique within the drift RNC/BSS. Serving RNC/BSS shall know the mapping between s-RNTI and the d-RNTIs allocated in Drift RNCs/BSSs for the same UE. Drift RNC/BSS shall know the s-RNTI and SRNC-ID related to existing d-RNTI within the drift RNC/BSS.

**c-RNTI is used:**

- by UE to identify itself to the controlling RNC;
- by controlling RNC to address the UE.

c-RNTI is allocated by controlling RNC upon UE accessing a new cell. C-RNTI shall be unique within the accessed cell. Controlling RNC shall know the d-RNTI associated to the c-RNTI within the same logical RNC (if any).

**u-RNTI**

The u-RNTI is allocated to an UE having a RRC connection and identifies the UE within UTRAN/GERAN Iu mode.

u-RNTI is composed of:

- SRNC identity;
- s-RNTI.

**DSCH-RNTI is used:**

- by controlling RNC to address the UE on the DSCH [TDD- and USCH].

DSCH-RNTI is allocated by controlling RNC upon UE establishing a DSCH [TDD - or USCH] channel. DSCH-RNTI shall be unique within the cell carrying the DSCH [TDD – and/or USCH]. [FDD - DSCH-RNTI is used as UE identifier in the MAC-c/sh header over DSCH. It is used only in the downlink.] [TDD – DSCH-RNTI is used as UE identifier in RRC messages concerning DSCH and USCH allocations and is used in both the downlink and uplink].

**HS-DSCH RNTI is used:**

- for the UE specific CRC in HS-SCCH and HS-PDSCH.

HS-DSCH RNTI is allocated by controlling RNC upon UE establishing a HS-DSCH channel. HS-DSCH RNTI shall be unique within the cell carrying the HS-DSCH.

[FDD -](#)

[E-RNTI is used:](#)

- [for the UE/UE group specific CRC in E-AGCH.](#)

[E-DCH RNTI is allocated by NodeB upon UE establishing an E-DCH channel. E-DCH RNTI allocated to a UE/UE group shall be unique within the cell carrying the E-DCH.](#)

Each RNC has a unique identifier within the UTRAN part of the PLMN, denoted by RNC identifier (RNC-ID). This identifier is used to route UTRAN interface messages to correct RNC. RNC-ID of the serving RNC together with the s-RNTI is a unique identifier of the UE in the UTRAN part of the PLMN.

### 6.1.7.1 Usage of RNTI

u-RNTI is used as a UE identifier for the first cell access (at cell change) when a RRC connection exists for this UE and for UTRAN originated paging including associated response messages. RNC-ID is used by Controlling RNC/BSS to route the received uplink messages towards the Serving RNC/BSS.

NOTE: For the initial access a unique core network UE identifier is used.

c-RNTI is used as a UE identifier in all other DCCH/DTCH common channel messages on air interface.

## 6.1.8 Identifiers for dedicated resources within UTRAN

### 6.1.8.1 Radio Network Control Plane identifiers

Each addressable object in each reference point has an application part level identifier. This identifier is allocated autonomously by the entity responsible for initiation of the setup of the object. This application part identifier will be used as a reference to the object that is setup. Both ends of the reference point shall memorise the AP Identifier during the lifetime of the object. Application part identifier can be related to a specific Transport Network identifier and that relationship shall also be memorised by both ends.

Table 1 lists the basic AP level identifiers in each reference point.

**Table 1: Basic AP level identifiers in each reference point**

Object	Identifier	Abbreviation	Valid for
Radio Access Bearer	Radio Access Bearer ID	RAB-ID	lu
Dedicated Transport channel	DCH-ID	DCH-ID	lur, lub
Downlink Shared Channel	DSCH-ID	DSCH-ID	lur, lub
[TDD Uplink Shared Channel]	USCH-ID	USCH-ID	lur, lub

### 6.1.8.2 Transport Network Identifiers

Transport Network identifiers are used in the Transport Network Layer (TNL) to identify the transport bearer and may be used in User Plane in the actual data transmission using the transport link. The Transport Network identifier identifies the transport link according to the naming conventions defined for the transport link type in question. Both ends of the reference point of the concerned TNL shall memorise the Transport Network identifiers during the lifetime of the transport link. Each Transport Network identifier can be binded to an Application Part identifier.

The Transport Network identifiers vary depending on the transport link type.

Table 2 indicates examples of the identifiers used for different transmission link types.

**Table 2: Examples of the identifiers used for different transmission link types**

Transmission link type	Transport Network Identifier
AAL2	AAL2 Path ID + CID
GTP over IP	IP address + TEID
UDP over IP	IP address + UDP port

The communication of Transport Network identifiers is made in two ways:

When an ALCAP is used, the transport layer address communicated via the Radio Network Layers protocols (NBAP, RNSAP, RANAP...) is a Transport Network Control Plane address and the Transport Network identifiers are communicated through this Transport Network Control Plane only.

When no ALCAP is used, the Transport Network identifiers are directly communicated via the Radio Network Layers protocols (NBAP, RNSAP, RANAP...) on all interfaces.

In both cases, the transport layer address (e.g. IP address) is encapsulated by the Transport Network Layer in the NSAP structure as defined in [Annex A of [15], [16]] transported transparently on Iub, Iur and Iu-CS and passed transparently from the Radio Network Layer to the Transport Network Layer. The NSAP structure (encapsulation) is only used in order to provide to the TNL explicit identification of the type of the TNL address that is being conveyed by the given RNL protocol. It is then the responsibility of the Transport Network Layer to interpret this structure (e.g. to determine accordingly if the requested network type is ATM or IP).

On the Iu-PS, the NSAP structure is not used in RANAP but the 'straight IP addressing' shall be used.

The following scheme depicts the encapsulation of a native IPv6 address in NSAP structure when conveyed in RANAP, RNSAP and NBAP.

Octet 1	octet 2	octet 3	octet 4
AFI=35 (IANA)	ICP=0 (embedded IPv6)	IPv6 (byte 1)	
IPv6 (bytes 2-5)			
IPv6 (bytes 6-9)			
IPv6 (bytes 10-13)			
IPv6 (bytes 14-16)			0000 0000

**Figure 6A: IPv6 address embedded in NSAP structure in RANAP/RNSAP/NBAP.**

### 6.1.8.3 Binding identifier

Binding Identifier (Binding ID) is used to initialise the linkage between ALCAP and Application Part (RANAP, RNSAP, NBAP) identifiers. Binding identifier can be used both in Radio Network Control plane Application Part protocols and in Transport Network Control Plane's ALCAP protocol. When no ALCAP is used, Binding ID may also be used to carry the UDP port on Iub, Iur and Iu-CS interfaces.

Binding ID binds the Radio and Transport Network Control plane identifiers together. To ensure maximal independence of those two planes, the binding ID should be used only when necessary: Binding ID shall thus be used only in Radio Network Control plane Application Part messages in which a new association between the planes is created and in ALCAP messages creating new transport bearers.

Binding ID for each transport bearer shall be allocated before the setup of that transport bearer.

The Binding ID is sent on one direction using the Application Part protocol and is return in the other direction by the ALCAP protocol.

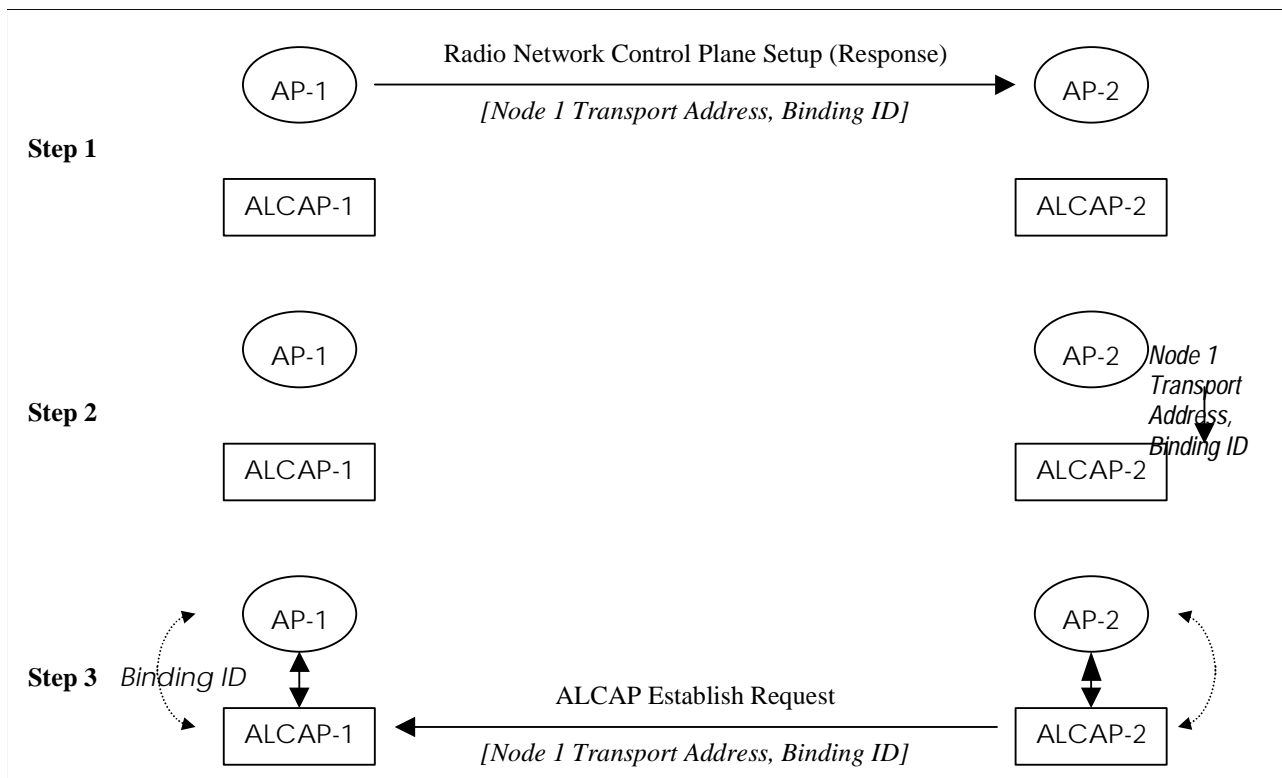
When an Application Part procedure with an allocated Binding ID is applied for modifying an existing Radio Network User Plane connection, the decision to use the Binding ID (and the ALCAP procedures) shall be done by that end of the reference point that decides whether to use the existing transport bearer or to set up a new transport bearer.

The Binding ID shall already be assigned and tied to a radio application procedure when the first ALCAP message is received in a node.

The association between the connection Id in the Application Part protocol (e.g. identifying a RAB) and the corresponding connection Id in the ALCAP protocol (e.g. identifying the AAL2 channel for that RAB) that was created with the help of Binding ID shall be memorised by both peers of each reference point for the lifetime of the corresponding transport bearer.

The Binding ID may be released and re-used as soon as both the Application Part procedure and the ALCAP procedure that used it are completed in both peers of the reference point.

Figure 6a illustrates how application instances of the Radio Network Control Plane and instances of the Transport Network Plane are linked together through the Binding Identifier in the set-up phase.



- Step 1: Application Part AP-1 assigns the Binding Identifier and sends a Radio Network Control Plane Set-up (Response) message (which of the two messages depends on the involved interface - lu/lur or lub). The message contains the originating node Transport layer address and the Binding Identifier.
- Step 2: Among reception of the Radio Network Control Plane Set-up message, the peer entity AP-2 requests ALCAP-2 to establish a transport bearer. The Binding Identifier is passed to ALCAP-2.
- Step 3: ALCAP-2 sends an ALCAP Establish Request to the peer entity ALCAP-1. The message contains the Binding Identifier. The Binding Identifier allows correlating the incoming transport connection with the Application Part transaction in step 1.

**Figure 6a: Usage of Binding ID**

Table 3 indicates the binding identifier allocating entity in each interface.

**Table 3: Binding identifier allocating entity in each interface**

Reference point	Allocating entity	Application part message including Binding-ID
lu	CN	Request from CN
lur	DRNC	Response to the request from SRNC
lub	Node-B	Response to the request from DRNC

### 6.1.9 URA Identity

The URA identity is used to uniquely identify an URA, which is a specified set of UTRAN and/or GERAN cells. The URA identity can be used to indicate to the UE and the SRNC which URA it shall use in case there are multiple URA identities broadcast in the cell where the UE is located.

## 6.2 Transport Addresses

The transport layer address parameter is transported in the radio network application signalling procedures that result in establishment of transport bearer connections.

The transport layer address parameter shall not be interpreted in the radio network application protocols and reveal the addressing format used in the transport layer.



The formats of the transport layer addresses are further elaborated in [9], [10], [11], [18].

## 6.3 Function Distribution Principles

For radio resource management functionality, the following principles apply:

- The CRNC owns the radio resources of a cell.
- The SRNC handles the connection to one UE, and may borrow radio resources of a certain cell from the CRNC.
- Dynamical control of power for dedicated channels, within limits admitted by CRNC, is done by the SRNC.
- Dynamic control on smaller time-scale for some radio links of the UE connection may be done by the Node B. This “inner loop” control is controlled by an “outer loop”, for which the SRNC has overall responsibility.
- Scheduling of data for dedicated channels is done by the SRNC, while for common channels it is done by the CRNC.

For management of node-internal resources, the following principle apply:

- Each UTRAN node is considered a network element on its own. The knowledge about the equipment of a network element is kept within the network element itself and its management system. The node itself always manages node-internal resources.

For transport network resource management, the following principle apply:

- Management of transport network resources belong to the Transport Layer. Mechanisms relevant for the selected transport technology are used. No functional split between UTRAN nodes is specified what regards the Transport Layer.

As a general guideline, the UTRAN protocols should be designed in such a way that they minimise the need for a DRNC to interpret the user plane frame protocol information other than for the combining/splitting purpose.

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# 7 UTRAN Functions description

## 7.1 List of functions

- Transfer of User Data.
- Functions related to overall system access control:
  - Admission Control;
  - Congestion Control;
  - System information broadcasting.
- Radio channel ciphering and deciphering.
- Integrity protection.
- Functions related to mobility:
  - Handover;
  - SRNS Relocation;
  - Paging support;
  - Positioning;
  - GERAN System Information Retrieval.

- Functions related to radio resource management and control:
  - Radio resource configuration and operation;
  - Radio environment survey;
  - Combining/splitting control;
  - Connection set-up and release;
  - Allocation and deallocation of Radio Bearers;
  - [TDD - Dynamic Channel Allocation (DCA)];
  - Radio protocols function;
  - RF power control;
  - [3.84 Mcps TDD - Timing Advance];
  - [1.28 Mcps TDD – Uplink Synchronisation];
  - Radio channel coding;
  - Radio channel decoding;
  - Channel coding control;
  - Initial (random) access detection and handling;
  - CN Distribution function for Non Access Stratum messages.
- Synchronisation.
- Functions related to broadcast and multicast services (see note) (broadcast/multicast interworking function BM-IWF).

NOTE: Only Broadcast is applicable for Release 99.

- Broadcast/Multicast Information Distribution.
- Broadcast/Multicast Flow Control.
- CBS Status Reporting.
- Tracing.
- Volume reporting.
- NAS Node Selection.
- RAN Information Management.

## 7.2 Functions description

### 7.2.0 Transfer of user data

This function provides user data transfer capability across the UTRAN between the Iu and Uu reference points.

#### 7.2.1 Functions related to overall system access control

System access is the means by which a UMTS user is connected to the UTRAN in order to use UMTS services and/or facilities. User system access may be initiated from either the mobile side, e.g. a mobile originated call, or the network side, e.g. a mobile terminated call.

### 7.2.1.1 Admission Control

The purpose of the admission control is to admit or deny new users, new radio access bearers or new radio links (for example due to handover). The admission control should try to avoid overload situations and base its decisions on interference and resource measurements. The admission control is employed at for example initial UE access, RAB assignment/reconfiguration and at handover. These cases may give different answers depending on priority and situation.

The Admission Control function based on UL interference and DL power is located in the Controlling RNC.

The Serving RNC is performing admission Control towards the Iu interface.

### 7.2.1.2 Congestion Control

The task of congestion control is to monitor, detect and handle situations when the system is reaching a near overload or an overload situation with the already connected users. This means that some part of the network has run out, or will soon run out of resources. The congestion control should then bring the system back to a stable state as seamless as possible.

NOTE: This admission Control function is related to Radio Resources.

Congestion control is performed within UTRAN.

### 7.2.1.3 System information broadcasting

This function provides the mobile station with the Access Stratum and Non Access Stratum information which are needed by the UE for its operation within the network.

The basic control and synchronisation of this function is located in UTRAN.

## 7.2.2 Radio channel ciphering and deciphering

This function is a pure computation function whereby the radio transmitted data can be protected against a non-authorized third-party. Ciphering and deciphering may be based on the usage of a session-dependent key, derived through signalling and/or session dependent information.

This function is located in the UE and in the UTRAN.

## 7.2.3 Functions related to Mobility

### 7.2.3.1 Handover

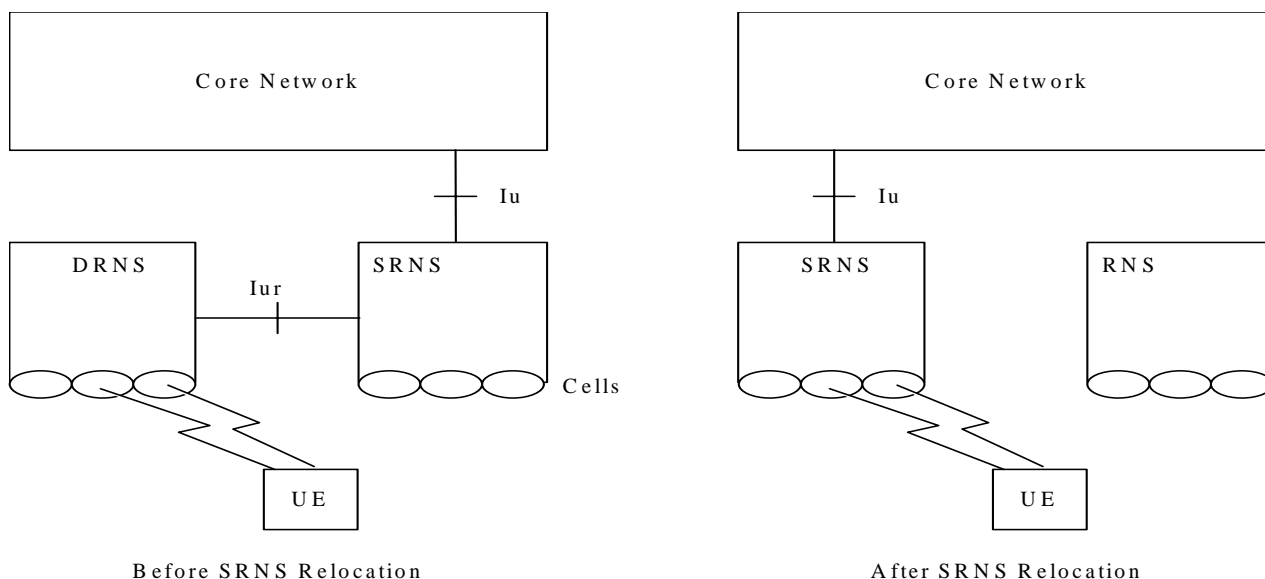
This function manages the mobility of the radio interface. It is based on radio measurements and it is used to maintain the Quality of Service requested by the Core Network.

Handover may be directed to/from another system (e.g. UMTS to GSM handover).

The handover function may be either controlled by the network, or independently by the UE. Therefore, this function may be located in the SRNC, the UE, or both.

### 7.2.3.2 SRNS Relocation

The SRNS Relocation function coordinates the activities when the SRNS role is to be taken over by another RNS/BSS. The SRNS relocation function manages the Iu interface connection mobility from an RNS to another RNS/BSS.



**Figure 7: Serving RNS Relocation**

The SRNS Relocation is initiated by the SRNC.

This function is located in the RNC and the CN.

### 7.2.3.3 Paging support

This function provides the capability to request a UE to contact the UTRAN/GERAN Iu mode when the UE is in Idle, CELL\_PCH or URA\_PCH/GRA\_PCH states [6], [21]. This function also encompasses a coordination function between the different Core Network Domains onto a single RRC connection.

### 7.2.3.4 Positioning

This function provides the capability to determine the geographic position of a UE.

### 7.2.3.5 NAS Node Selection Function

The optional NAS Node Selection Function (NNSF) enables the RNC to initially assign CN resources to serve a UE and subsequently setup a signalling connection to the assigned CN resource.

The NNSF is described in detail in [20].

### 7.2.3.6 Shared Networks Access Control

The Shared Networks Access Control function allows the CN to request the UTRAN to apply UE specific access control to LAs of the UTRAN and LAs of neighbouring networks.

The Shared Networks Access Control function is based on either whole PLMNs or Shared Network Areas (SNAs). An SNA is an area corresponding to one or more LAs within a single PLMN to which UE access can be controlled.

In order to apply Shared Networks Access Control for the UTRAN or for a neighbouring system, the UTRAN shall be aware of whether the concerned LA belongs to one (or several) SNA(s) or not.

If access for a specific UE needs to be restricted, the CN shall provide SNA Access Information for that UE. The SNA Access Information indicates which PLMNs and/or which SNAs the UE is allowed to access.

Based on whether the LA belongs to the PLMNs or SNAs the UE is allowed to access, the UTRAN determines if access to a certain LA for a certain UE shall be allowed.

If access is not allowed, the UTRAN shall request the CN to release existing resources either by initiating Iu Release Request procedure with cause value "Access Restricted due to Shared Network" or by requesting a relocation with the same cause value.

### 7.2.3.7 GERAN System Information Retrieval

In order to provide the UE with system information related to NACC towards a GERAN system - to be used as an optimisation - the GERAN System Information Retrieval function allows:

- The source RAN to request GERAN (via CN) to provide this system information.
- The SRNC to request the DRNC (via Iur interface) to provide this system information, if available.

The request and subsequent transfer of the GERAN System Information is performed transparently with the RIM function. The RIM function is further described in section 7.2.8.

## 7.2.4 Functions related to radio resource management and control

*Radio resource management* is concerned with the allocation and maintenance of radio communication resources. UMTS radio resources must be shared between circuit transfer mode services and packet transfer modes services (i.e. Connection-oriented and/or connectionless-oriented services).

### 7.2.4.1 Radio resource configuration and operation

This function performs configures the radio network resources, i.e. cells and common transport channels, and takes the resources into or out of operation.

### 7.2.4.2 Radio environment survey

This function performs measurements on radio channels (current and surrounding cells) and translates these measurements into radio channel quality estimates. Measurements may include:

- 1) Received signal strengths (current and surrounding cells);
- 2) Estimated bit error ratios, (current and surrounding cells);
- 3) Estimation of propagation environments (e.g. high-speed, low-speed, satellite, etc.);
- 4) Transmission range (e.g. through timing information);
- 5) Doppler shift;
- 6) Synchronisation status;
- 7) Received interference level;
- 8) Total DL transmission power per cell.

This function is located in the UE and in the UTRAN.

### 7.2.4.3 Combining/splitting control

This function controls the combining/splitting of information streams to receive/ transmit the same information through multiple physical channels (possibly in different cells) from/ towards a single mobile terminal.

The UL combining of information streams may be performed using any suitable algorithm, for example:

- [FDD - based on maximum ratio algorithm (maximum ratio combining)];
- [FDD - based on quality information associated to each TBS (selection-combining)];
- [TDD - based on the presence/absence of the signal (selection)].

[FDD - combining/splitting control should interact with channel coding control in order to reduce the bit error ratio when combining the different information streams].

In some cases, depending on physical network configuration, there may be several entities which combine the different information streams, i.e. there may be combining/splitting at the SRNC, DRNC or Node B level.

This function is located in the UTRAN.

#### 7.2.4.4 Connection set-up and release

This function is responsible for the control of connection element set-up and release in the radio access sub network. The purpose of this function is:

- 1) To participate in the processing of the end-to-end connection set-up and release;
- 2) And to manage and maintain the element of the end-to-end connection, which is located in the radio access sub network.

In the former case, this function will be activated by request from other functional entities at call set-up/release. In the latter case, i.e. when the end-to-end connection has already been established, this function may also be invoked to cater for in-call service modification or at handover execution.

This function is located both in the UE and in the RNC.

#### 7.2.4.5 Allocation and deallocation of Radio Bearers

This function consists of translating the connection element set-up (resp. release) requests into physical radio channel allocation (resp. deallocation) accordingly to the QoS of the Radio Access Bearer.

This function may be activated during the call since e.g. the user service request may vary, or macro diversity may be used.

This function is located in the CRNC and SRNC.

#### 7.2.4.6 [TDD - Dynamic Channel Allocation (DCA)]

DCA is used in the TDD mode. It includes Fast DCA and Slow DCA. Slow DCA is the process of assigning radio resources, including time slots, to different TDD cells according to the varying cell load. Fast DCA is the process of assigning resources to Radio Bearers, and is related to Admission Control.

#### 7.2.4.7 Radio protocols function

This function provides user data and signalling transfer capability across the UMTS radio interface by adapting the services (according to the QoS of the Radio Access Bearer) to the Radio transmission. This function includes amongst other:

- Multiplexing of services and multiplexing of UEs on Radio bearers;
- Segmentation and reassembly;
- Acknowledged/Unacknowledged delivery according to the Radio Access Bearer QoS.

#### 7.2.4.8 RF power control

This group of functions controls the level of the transmitted power in order to minimise interference and keep the quality of the connections. It consist of the following functions: UL Outer Loop Power Control, DL Outer Loop Power Control, UL Inner Loop Power Control, DL Inner Loop Power Control, UL Open Loop Power Control and DL Open Loop Power Control.

#### 7.2.4.8.1 UL Outer Loop Power Control

The UL Outer Loop Power Control located in the SRNC [TDD – except for uplink shared channels where it is located in the CRNC] sets the target quality value for the UL Inner Loop Power Control which is located in Node B for FDD and 1.28 Mcps TDD and is located in the UE for 3.84 Mcps TDD. It receives input from quality estimates of the transport channel. The UL outer loop power control is mainly used for a long-term quality control of the radio channel.

In FDD and 1.28 Mcps TDD this function is located in the UTRAN, in 3.84 Mcps TDD the function is performed in UTRAN and the target quality value is sent to the UE by the SRNC or the CRNC, respectively.

In FDD and 1.28 Mcps TDD, if the connection involves both a SRNS and a DRNS the function UL Outer Loop Power Control (located in the SRNC [1.28 Mcps TDD – or in the CRNC, respectively]) sets the target quality for the UL Inner Loop Power Control function (located in Node B).

#### 7.2.4.8.2 DL Outer Loop Power Control

The DL Outer Loop Power Control sets the target quality value for the DL inner loop power control. It receives input from quality estimates of the transport channel, measured in the UE. The DL outer loop power control is mainly used for a long-term quality control of the radio channel.

This function is located mainly in the UE, but some control parameters are set by the UTRAN.

The SRNC, regularly (or under some algorithms), sends the target down link power range based on the measurement report from UE.

#### 7.2.4.8.3 UL Inner Loop Power Control

The UL Inner Loop Power Control sets the power of the uplink dedicated [TDD – and shared] physical channels.

In FDD, it is a closed loop process. It receives the quality target from UL Outer Loop Power Control and quality estimates of the uplink dedicated physical control channel. The power control commands are sent on the downlink dedicated physical control channel to the UE. This function is located in both the UTRAN and the UE.

In 3.84 Mcps TDD it is an open loop process, it receives the quality target from the UL Outer Loop Power Control and uses the quality target and quality estimates of downlink channels to set the transmit power. This function is located in the UE.

In 1.28 Mcps TDD, it is a closed loop process. It receives the quality target from UL Outer Loop Power Control, and quality estimates of the uplink dedicated physical channels as well as physical uplink shared channels, if any. The power control commands are sent on the downlink dedicated physical channels and physical downlink shared channels, if any, to the UE. This function is located in both the UTRAN and the UE.

#### 7.2.4.8.4 DL Inner Loop Power Control

The DL Inner Loop Power Control sets the power of the downlink dedicated [TDD – and shared] physical channels. It receives the quality target from DL Outer Loop Power Control and quality estimates of the [FDD - downlink dedicated physical control channel] [TDD – downlink dedicated physical channels and physical downlink shared channels if any]. The power control commands are sent on the [FDD - uplink dedicated physical control channel] [TDD – downlink dedicated physical channels and physical downlink shared channels if any] to the UTRAN.

This function is located in both the UTRAN and the UE.

#### 7.2.4.8.5 UL Open Loop Power Control

The UL Open Loop Power Control sets the initial power of the UE, i.e. at random access. The function uses UE measurements and broadcasted cell/system parameters as input.

This function is located in both the UTRAN and the UE.

#### 7.2.4.8.6 DL Open Loop Power Control

The DL Open Loop Power Control sets the initial power of downlink channels. It receives downlink measurement reports from the UE.

#### 7.2.4.9 Radio channel coding

This function introduces redundancy into the source data flow, increasing its rate by adding information calculated from the source data, in order to allow the detection or correction of signal errors introduced by the transmission medium. The channel coding algorithm(s) used and the amount of redundancy introduced may be different for the different types of logical channels and different types of data.

This function is located in both the UE and in the UTRAN.

#### 7.2.4.10 Radio channel decoding

This function tries to reconstruct the source information using the redundancy added by the channel coding function to detect or correct possible errors in the received data flow. The channel decoding function may also employ a priori error likelihood information generated by the demodulation function to increase the efficiency of the decoding operation. The channel decoding function is the complement function to the channel coding function.

This function is located in both the UE and in the UTRAN.

#### 7.2.4.11 Channel coding control

This function generates control information required by the channel coding/ decoding execution functions. This may include channel coding scheme, code rate, etc.

This function is located in both the UE and in the UTRAN.

#### 7.2.4.12 Initial (random) access detection and handling

This function will have the ability to detect an initial access attempt from a mobile station and will respond appropriately. The handling of the initial access may include procedures for a possible resolution of colliding attempts, etc. The successful result will be the request for allocation of appropriate resources for the requesting mobile station.

This function is located in the UTRAN.

#### 7.2.4.13 CN Distribution function for Non Access Stratum messages

In the RRC protocol, messages from the NAS shall be transparently transferred within the Access Stratum using the Direct Transfer procedure. A distribution function in the UE and the SRNC shall handle the CN domain indicator being part of the AS message to direct messages to the appropriate NAS entity i.e. the appropriate Mobility Management instance in the UE domain and the appropriate CN domain.

In the downlink direction the UE shall be provided by the SRNC with the information on the originating CN domain for the individual NAS message.

In the uplink direction, the process performed by the distribution function in the UE consists in inserting the appropriate values for the CN domain indicator in the AS message and the process performed by the SRNC consists in evaluating the CN domain indicator contained in the AS message and distribute the NAS message to the corresponding RANAP instance for transfer over Iu interface.

This distribution function is located in both the UE and in the SRNC.

#### 7.2.4.14 [3.84 Mcps TDD - Timing Advance]

This function is used in uplink to align the uplink radio signals from the UE to the UTRAN. Timing Advance is based on uplink burst timing measurements performed by the Node B L1, and on Timing Advance commands sent downlink to the UE.

#### 7.2.4.15 Service specific function for Non Access Stratum messages

A service specific function in the UE provides a SAP for a particular service (e.g. a given priority). In the downlink direction, the SRNC may base the routing on this SAP.

This service specific function is located in both the UE and the SRNC.



#### 7.2.4.16 [1.28 Mcps TDD – Uplink Synchronisation]

This function is used in uplink to synchronise the uplink radio signals from the UE to the UTRAN. At the detection of uplink burst, the Node B will evaluate the received power level and timing, and reply by sending the adjustment information to UE to modify its timing and power level for next transmission and for establishment of the Uplink synchronisation procedure.

### 7.2.5 Functions related to broadcast and multicast services (broadcast/multicast interworking function BM-IWF)

See note.

#### 7.2.5.1 Broadcast/Multicast Information Distribution

The broadcast/multicast information distribution function distributes received CBS messages towards the BMC entities configured per cell for further processing. The distribution of broadcast/multicast information relate on the mapping between service area and cells controlled by the RNC. The provision of this mapping information is an O&M function.

NOTE: Only Broadcast is applicable for Release 99.

#### 7.2.5.2 Broadcast/Multicast Flow Control

When processing units of the RNC becomes congested, the Broadcast/Multicast Flow Control function informs the data source about this congestion situation and takes means to resolve the congestion.

#### 7.2.5.3 CBS Status Reporting

The RNC collects status data per cell (e.g. No-of-Broadcast-Completed-List, Radio-Resource-Loading-List), and matches these data to Service Areas. The status data is transmitted to the CBC, if a query has been made by the CBC.

### 7.2.6 Tracing

This function allows tracing of various events related to the UE and its activities.

### 7.2.7 Volume Reporting

The data volume reporting function is used to report the volume of unacknowledged data to the CN for accounting purpose.

### 7.2.8 RAN Information Management

The RAN Information Management (RIM) function is a generic mechanism that allows the request and transfer of information between two RAN nodes e.g. GERAN System information. The RIM mechanism allows to start, stop and resume both on demand and on event transfer of information. RIM also provides native error handling function at RIM level and at RIM application level. The RIM function is further described in [22] and [23].

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## 8 Mobility Management

### 8.1 Signalling connection

Based on [2], the UE may either have or not have a signalling connection:

- 1) When a signalling connection exists that is established over the Dedicated Control Service Access Point (DC-SAP) from the Access Stratum.  
Therefore, the CN can reach the UE by the dedicated connection SAP on the CN side, and the UTRAN has a

context with the UE and CN for this particular connection. This context is erased when the connection is released. The *dedicated connection* can be initiated from the UE only.

NOTE: A dedicated connection is currently defined as Signalling Connection in [2]. Note that in the radio interface, dedicated or common channels can be used.

Depending on the activity of a UE, the location of the UE is known either on cell level (higher activity) or in a larger area consisting of several cells (lower activity). This will (i) minimise the number of location update messages for moving UEs with low activity and (ii) remove the need for paging for UEs known on cell level.

- 2) When a dedicated connection does not exist, the CN must reach the UE via the Notification SAP. The message sent to the UE can be a request to the UE to establish a dedicated connection. The UE is addressed with a user/terminal identity and a "geographical area".

## 8.2 Consequences for Mobility Handling

It is generally agreed to contain radio access specific procedures within UTRAN. This means that all cell level mobility should be handled within UTRAN. Also the cell structure of the radio network should not necessarily be known outside the UTRAN.

When there exists a dedicated connection to the UE, the UTRAN shall handle the radio interface mobility of the UE. This includes procedures such as soft handover, and procedures for handling mobility in the CELL\_PCH and URA\_PCH/GRA\_PCH state [7].

When a dedicated connection between the UTRAN and the UE does not exist, no UE information is needed in UTRAN. Therefore, the mobility is handled directly between UE and CN outside access stratum (e.g. by means of registration procedures). When paging the UE, the CN indicates a 'geographical area' that is translated within UTRAN to the actual cells that shall be paged. A 'geographical area' shall be identified in a cell-structure independent way. One possibility is the use of 'Location Area identities'.

During the lifetime of the dedicated connection, the registrations to the CN are suppressed by the UE. When a dedicated connection is released, the UE performs a new registration to the CN, when needed.

Thus, the UTRAN does not contain any permanent 'location registers' for the UE, but only temporary contexts for the duration of the dedicated connection. This context may typically contain location information (e.g. current cell(s) of the UE) and information about allocated radio resources and related connection references.

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# 9 Synchronisation

## 9.1 SYNCHRONISATION MODEL

Different synchronisation issues are identified within UTRAN, i.e.:

- Network Synchronisation;
- Node Synchronisation;
- Transport Channel synchronisation;
- Radio Interface Synchronisation;
- Time Alignment handling.

The Nodes involved by the above mentioned synchronisation issues (with exception of Network and Node Synchronisation) are shown by the Synchronisation Issues Model of figure 8.

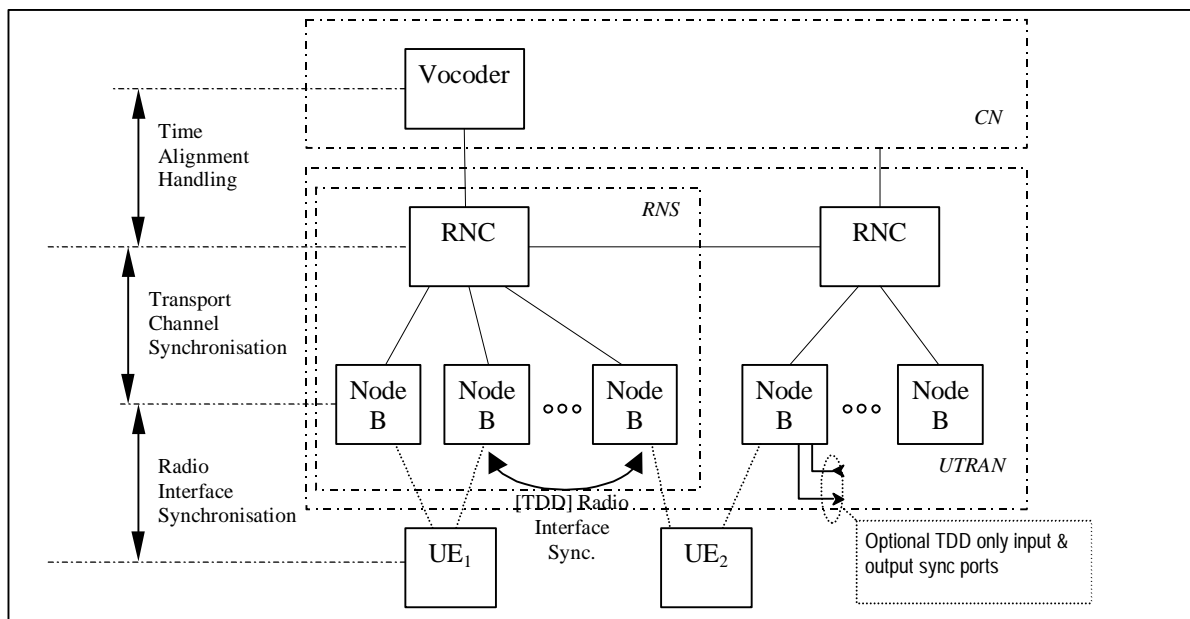


Figure 8: Synchronisation issues model

## 10 UTRAN O&M Requirements

### 10.1 O&M of Node B

The O&M of Node B is separated in two parts: the O&M linked to the actual implementation of Node B, denoted as Implementation Specific *O&M*, and the O&M which impacts on the traffic carrying resources in Node B controlled from the RNC, denoted *logical O&M*. The RNS architecture with the O&M interfaces is shown in figure 9.

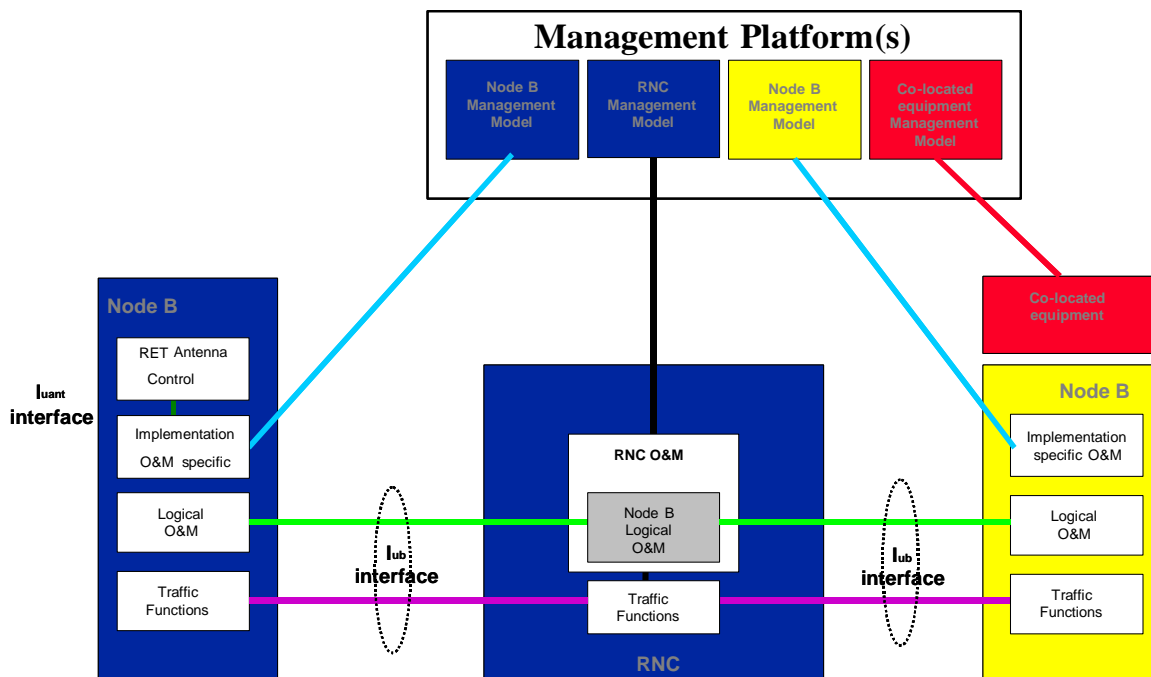


Figure 9: RNS architecture with O&M interfaces

NOTE 1: The concept of an interface from the RNC to the management system is shown for clarity only. Its definition is outside the scope of 3GPP-TSG-RAN-WG3.

NOTE 2: The presentation of the O&M functions within the management system is shown for clarity only. Their actual implementation is outside the scope of 3GPP-TSG-RAN-WG3.

NOTE 3: The standardisation of the Implementation Specific O&M is outside the scope of 3GPP-TSG-RAN-WG3. The 3GPP-TSG-RAN-WG3 should only address the bearer for the Implementation Specific O&M.

NOTE 4: The figure shows only logical connections and does not intend to mandate any physical interfaces.

NOTE 5: The Iuant interface to the control unit of the RET antenna is specified in the series of Technical Specifications 25.460, 25.461, 25.462 and 25.463 [24,25,26,27]. An Implementation Specific O&M function is needed for the RET antenna control to translate the control signalling from the Node B Element Manager into the control commands of the Iuant interface specified in [24].

### 10.1.1 Implementation Specific O&M

The Implementation Specific O&M functions are heavily dependent on the implementation of Node B, both for its hardware components and for the management of the software components. It needs therefore to be implementation dependent, and be performed between Node B and the management system.

One solution for the transport of Implementation Specific O&M is to route from Node B to the management system via the RNC. In this case, the Implementation Specific O&M interface and Iub interface share the same physical bearer, and [4] specifies the routing function and the transport bearer for this scenario. The deployment of the routing across the RNC in the UTRAN is optional. Where signalling between co-located equipment and its management system is required, this may be carried over the same bearer as Implementation Specific O&M.

### 10.1.2 Logical O&M

Logical O&M is the signalling associated with the control of logical resources (channels, cells,...) owned by the RNC but physically implemented in the Node B. The RNC controls these logical resources. A number of O&M procedures physically implemented in Node B impact on the logical resources and therefore require an information exchange between RNC and Node B. All messages needed to support this information exchange are classified as Logical O&M forming an integral part of NBAP.

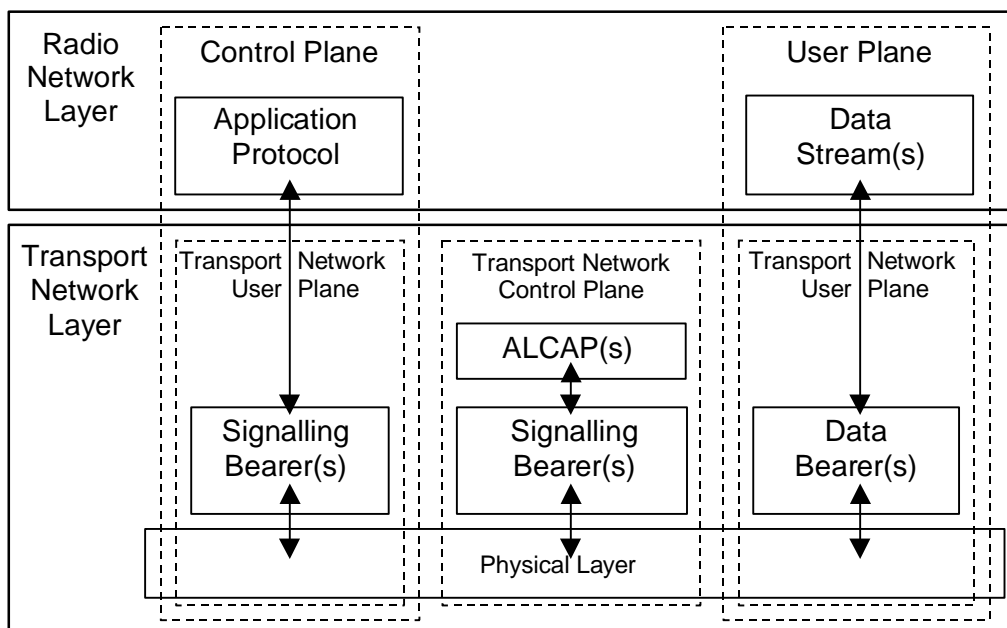
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## 11 UTRAN Interfaces

### 11.1 General Protocol Model for UTRAN Interfaces

#### 11.1.1 General

The general protocol model for UTRAN Interfaces is depicted in figure 10, and described in detail in the following subclauses. The structure is based on the principle that the layers and planes are logically independent of each other. Therefore, as and when required, the standardisation body can easily alter protocol stacks and planes to fit future requirements.



**Figure 10: General Protocol Model for UTRAN Interfaces**

## 11.1.2 Horizontal Layers

The Protocol Structure consists of two main layers, Radio Network Layer, and Transport Network Layer. All UTRAN related issues are visible only in the Radio Network Layer, and the Transport Network Layer represents standard transport technology that is selected to be used for UTRAN, but without any UTRAN specific requirements.

## 11.1.3 Vertical Planes

### 11.1.3.1 Control Plane

The Control Plane Includes the Application Protocol, i.e. RANAP, RNSAP or NBAP, and the Signalling Bearer for transporting the Application Protocol messages.

Among other things, the Application Protocol is used for setting up bearers for (i.e. Radio Access Bearer or Radio Link) in the Radio Network Layer. In the three plane structure the bearer parameters in the Application Protocol are not directly tied to the User Plane technology, but are rather general bearer parameters.

The Signalling Bearer for the Application Protocol may or may not be of the same type as the Signalling Protocol for the ALCAP. The Signalling Bearer is always set up by O&M actions.

### 11.1.3.2 User Plane

The User Plane Includes the Data Stream(s) and the Data Bearer(s) for the Data Stream(s). The Data Stream(s) is/are characterised by one or more frame protocols specified for that interface.

### 11.1.3.3 Transport Network Control Plane

The Transport Network Control Plane does not include any Radio Network Layer information, and is completely in the Transport Layer. It includes the ALCAP protocol(s) that is/are needed to set up the transport bearers (Data Bearer) for the User Plane. It also includes the appropriate Signalling Bearer(s) needed for the ALCAP protocol(s).

The Transport Network Control Plane is a plane that acts between the Control Plane and the User Plane. The introduction of Transport Network Control Plane is performed in a way that the Application Protocol in the Radio Network Control Plane is kept completely independent of the technology selected for Data Bearer in the User Plane. Indeed, the decision to actually use an ALCAP protocol is completely kept within the Transport Network Layer.

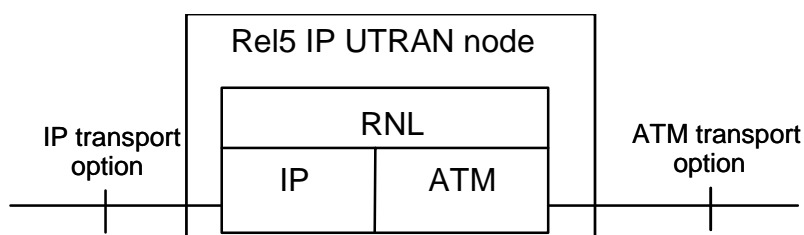
It should be noted that ALCAP might not be used for all types Data Bearers. If there is no ALCAP signalling transaction, the Transport Network Control Plane is not needed at all. This is the case when pre-configured Data Bearers are used or when the IP UTRAN option is used between two IP UTRAN nodes or between an IP UTRAN node and an IP CN node.

When Transport Network Control Plane is used, the transport bearers for the Data Bearer in the User Plane are set up in the following fashion. First there is a signalling transaction by the Application Protocol in the Control Plane, which triggers the set up of the Data Bearer by the ALCAP protocol that is specific for the User Plane technology.

The following interworking alternatives are specified for the IP-ATM interworking:

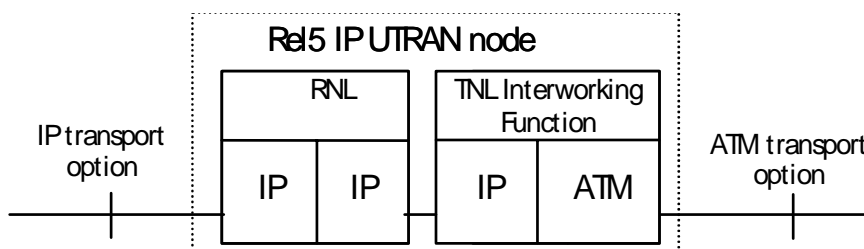
- 1) ATM/IP Dual Stack supported in the IP UTRAN node. When an ATM/IP dual stack is implemented in the IP UTRAN node, support of an IP ALCAP protocol is not required.

Annex A of [9] shows an example of protocols for the case the ATM&IP UTRAN/CN-node has no ATM connectivity.



- 2) An Interworking Function (IWF), either internal or external to the UTRAN/CN node.

Annex A of [9] shows an example of a protocol stack for the case when the IWF is an external unit to the UTRAN/CN node. Other protocol stacks for this case are not precluded.



### 11.1.3.4 Transport Network User Plane

The Data Bearer(s) in the User Plane, and the Signalling Bearer(s) for Application Protocol, belong also to Transport Network User Plane. As described in the previous subclause, the Data Bearers in Transport Network User Plane are directly controlled by Transport Network Control Plane during real time operation, but the control actions required for setting up the Signalling Bearer(s) for Application Protocol are considered O&M actions.

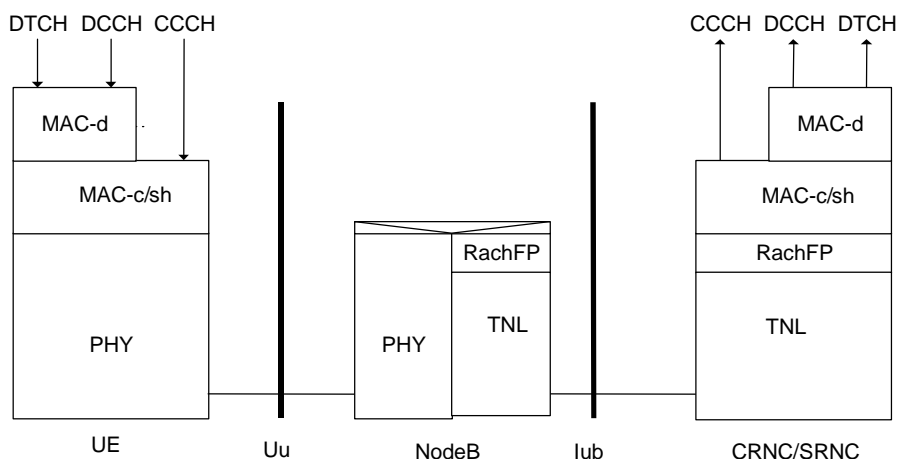
## 11.2 Protocol Model (Informative)

The following subclause is a informative subclause which aim is to provide an overall picture of how the MAC layer is distributed over Uu, Iub and Iur for the RACH, FACH, DCH, DSCH, HS-DSCH and [TDD USCH].

### 11.2.1 RACH Transport Channel

Figure 11 shows the protocol stack model for the RACH transport channel when the Controlling and Serving RNC are co-incident.

For the RACH transport channel, Dedicated MAC (MAC-d) uses the services of Common MAC (MAC-c/sh).



**Figure 11: RACH: Coincident Controlling and Serving RNC**

The Common MAC (MAC-c/sh) entity in the UE transfers MAC-c/sh PDU to the peer MAC-c/sh entity in the RNC using the services of the Physical Layer.

An Interworking Function (IWF) in the Node B interworks the RACH frame received by the PHY entity into the RACH Frame Protocol (RACH FP) entity.

The RACH Frame Protocol entity adds header information to form a RACH FP PDU that is transported to the RNC over a transport bearer.

At the RNC, the RACH FP entity delivers the MAC-c/sh PDU to the MAC-c/sh entity.

Figure 12 shows the protocol model for the RACH transport channel with separate Controlling and Serving RNC. In this case, Iur RACH Frame Protocol (RACH FP) is used to interwork the Common MAC (MAC-c/sh) at the Controlling RNC with the Dedicated MAC (MAC-d) at the Serving RNC.

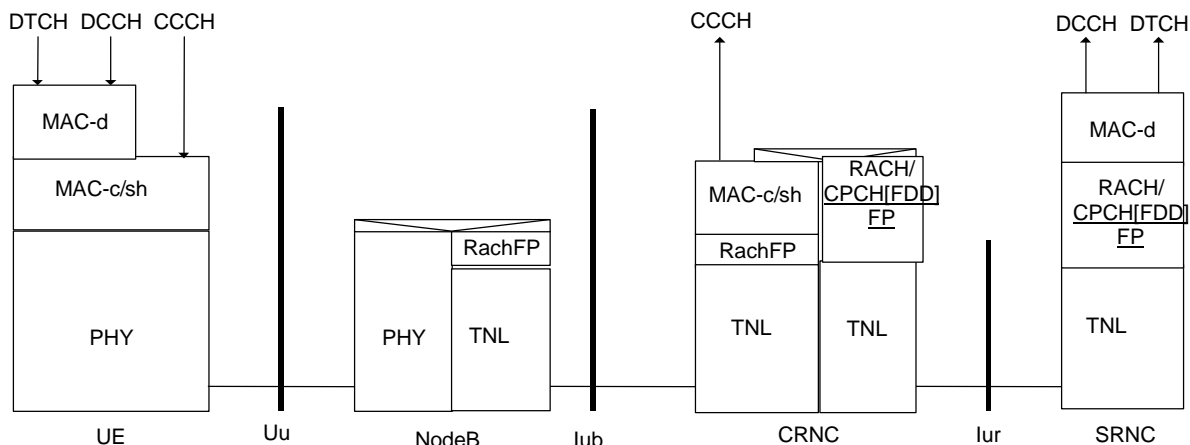


Figure 12: RACH: Separate Controlling and Serving RNC

### 11.2.2 CPCH [FDD] Transport Channel

Figure 13 shows the protocol model for the CPCH [FDD] transport channel when the Controlling and Serving RNC are co-incident.

For the CPCH [FDD] transport channel, Dedicated MAC (MAC-d) uses the services of Common MAC (MAC-c/sh).

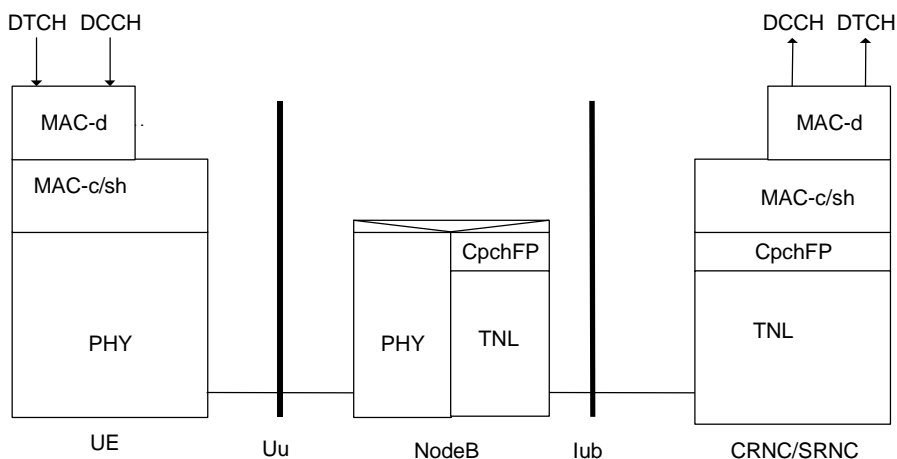


Figure 13: CPCH [FDD]: Coincident Controlling and Serving RNC

The Common MAC (MAC-c/ sh) entity in the UE transfers MAC-c PDU to the peer MAC-c entity in the RNC using the services of the Physical Layer.

An Interworking Function (IWF) in the Node B interworks the CPCH [FDD] frame received by the PHY entity into the CPCH [FDD] Frame Protocol (CPCH FP) entity.



The CPCH [FDD] Frame Protocol entity adds header information to form a CPCH [FDD] FP PDU which is transported to the RNC over a transport bearer.

At the RNC, the CPCH [FDD] FP entity delivers the MAC-c PDU to the MAC-c entity.

Figure 14 shows the protocol model for the CPCH [FDD] transport channel with separate Controlling and Serving RNC. In this case, Iur CPCH [FDD] Frame Protocol (CpchFP) is used to interwork the Common MAC (MAC-c/sh) at the Controlling RNC with the Dedicated MAC (MAC-d) at the Serving RNC.

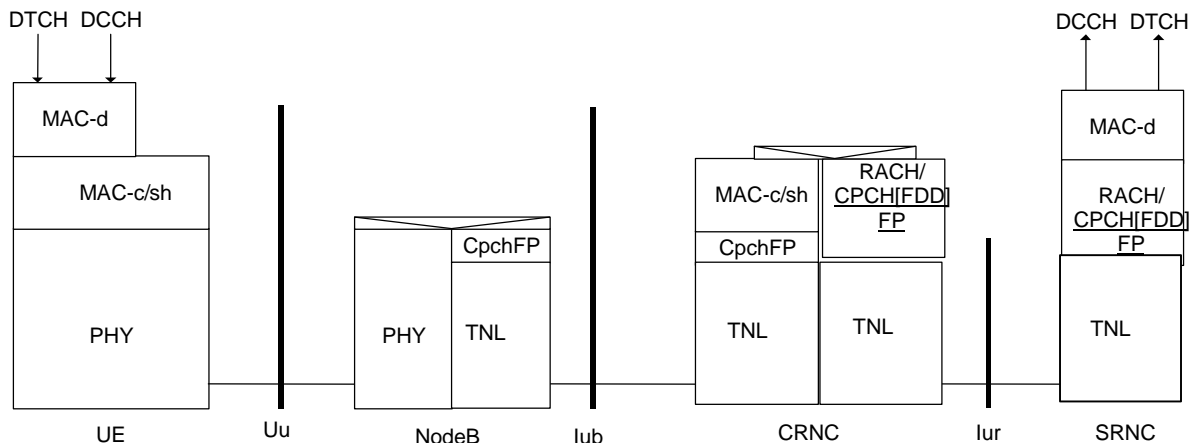


Figure 14: CPCH [FDD]: Separate Controlling and Serving RNC

### 11.2.3 FACH Transport Channel

Figure 15 shows the protocol model for the FACH transport channel when the Controlling and Serving RNC are co-incident.

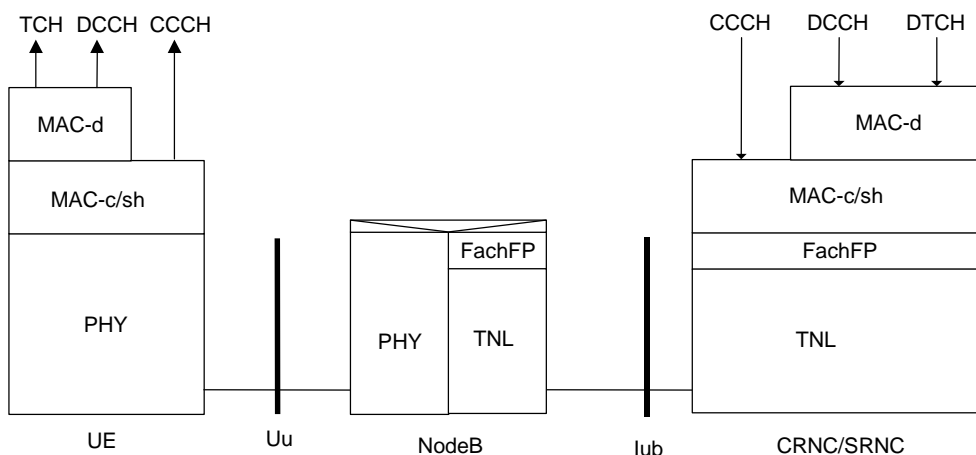


Figure 15: FACH Co-incident Controlling and Serving RNC

The Common MAC (MAC-c/sh) entity in the RNC transfers MAC-c PDU to the peer MAC-c entity in the UE using the services of the FACH Frame Protocol (FACH FP) entity.

The FACH Frame Protocol entity adds header information to form a FACH FP PDU which is transported to the Node B over a transport bearer.

An Interworking Function (IWF) in the Node B interworks the FACH frame received by FACH Frame Protocol (FACH FP) entity into the PHY entity.

FACH scheduling is performed by MAC-c/sh in the CRNC.

Figure 16 shows the protocol model for the FACH transport channel with separate Controlling and Serving RNC. In this case, Iur FACH Frame Protocol is used to interwork the Common MAC (MAC-c) at the Controlling RNC with the Dedicated MAC (MAC-d) at the Serving RNC.

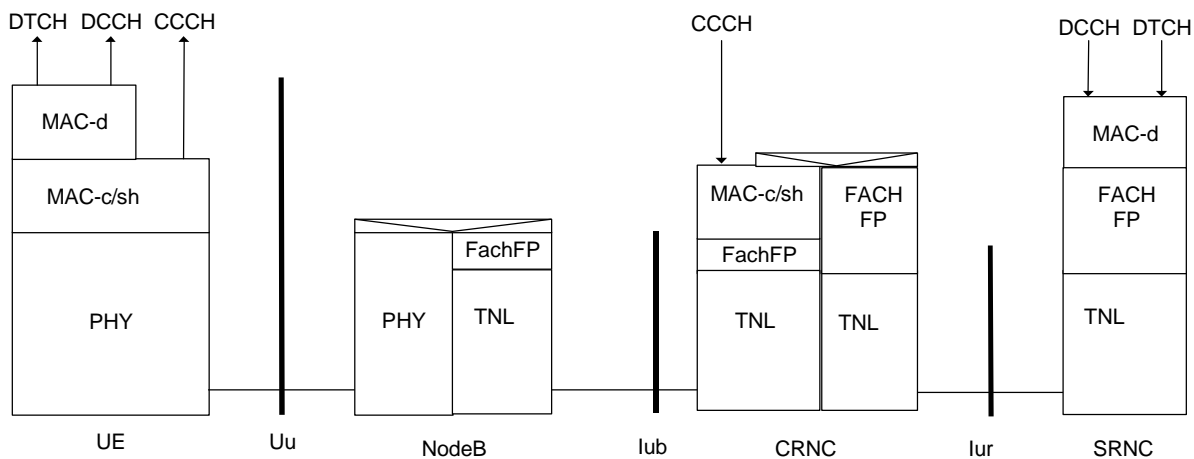


Figure 16: FACH: Separate Controlling and Serving RNC

### 11.2.4 DCH Transport Channel

Figure 17 shows the protocol model for the DCH transport channel when the Controlling and Serving RNC are co-incident.

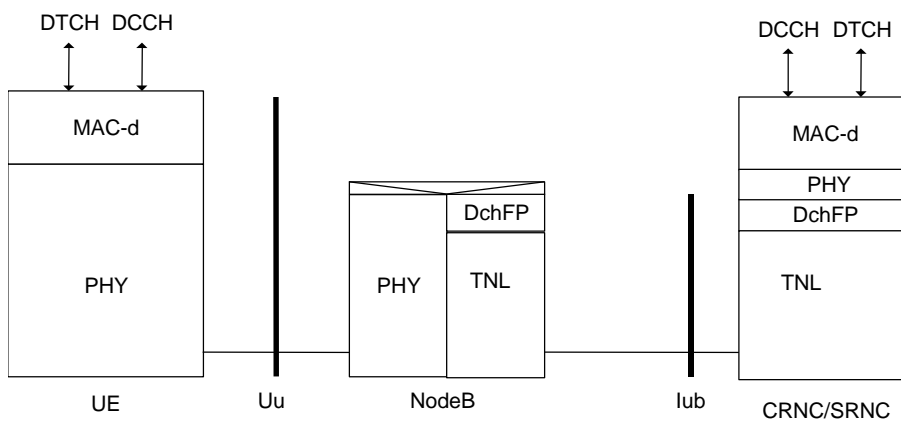
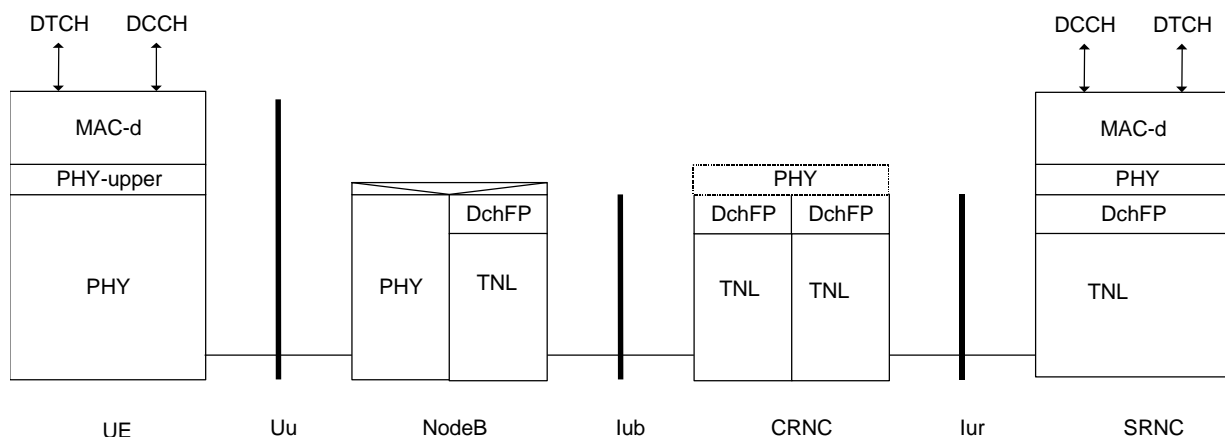


Figure 17: DCH: Co-incident Controlling and Serving RNC

The DCH transport channel introduces the concept of distributed PHY layer.

An Interworking Function (IWF) in the Node B interworks between the DCH Frame Protocol (DCH FP) entity and the PHY entity.

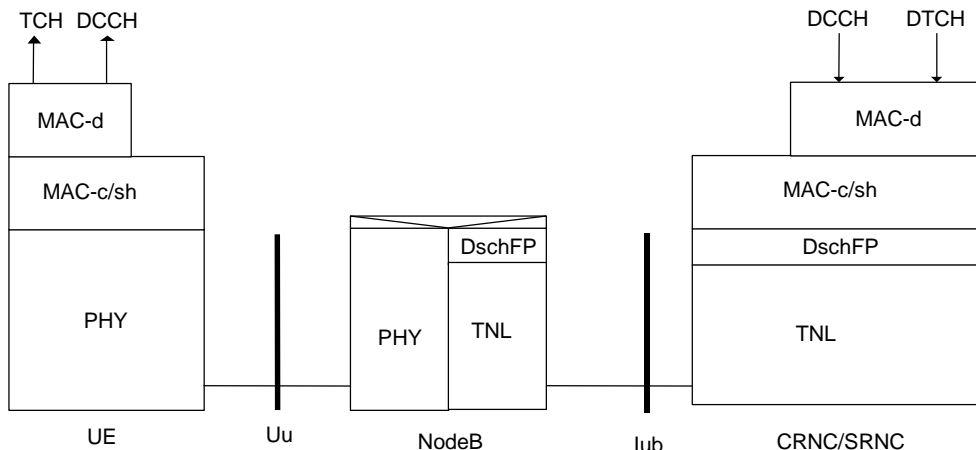


**Figure 18: DCH: Separate Controlling and Serving RNC**

Figure 18 shows the protocol model for the DCH transport channel with separate Controlling and Serving RNC. In this case, the Iub DCH FP is terminated in the CRNC and interworked with the Iur DCH FP through a PHY function. This function performs optional soft handover or can be a null function.

### 11.2.5 DSCH Transport Channel

Figure 19 shows the protocol model for the DSCH transport channel when the Controlling and Serving RNC are co-incident.



**Figure 19: DSCH Co-incident Controlling and Serving RNC**

The Shared MAC (MAC-c/sh) entity in the RNC transfers MAC-c/sh PDU to the peer MAC-c/sh entity in the UE using the services of the DSCH Frame Protocol (DSCH FP) entity. The DSCH FP entity adds header information to form a DSCH FP PDU that is transported to the Node B over a transport bearer.

An Interworking Function (IWF) in the Node B interworks the DSCH frame received by DSCH FP entity into the PHY entity. DSCH scheduling is performed by MAC-c/sh in the CRNC.

Figure 20 shows the protocol model for the DSCH transport channel with separate Controlling and Serving RNC. In this case, Iur DSCH Frame Protocol is used to interwork the MAC-c/sh at the Controlling RNC with the MAC-d at the Serving RNC.

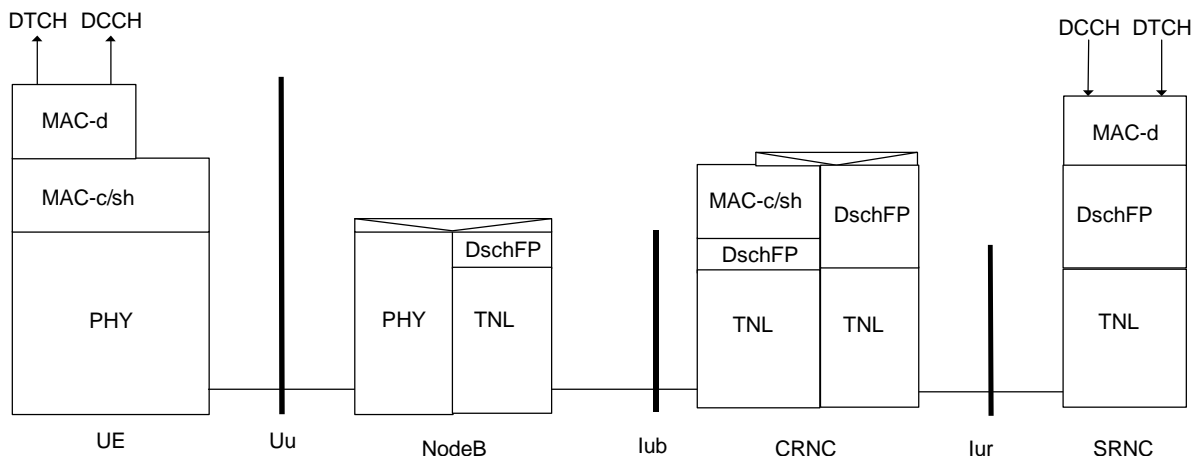


Figure 20: DSCH: Separate Controlling and Serving RNC

### 11.2.6 USCH Transport Channel [TDD]

Figure 21 shows the protocol model for the USCH transport channel when the Controlling and Serving RNC are coincident.

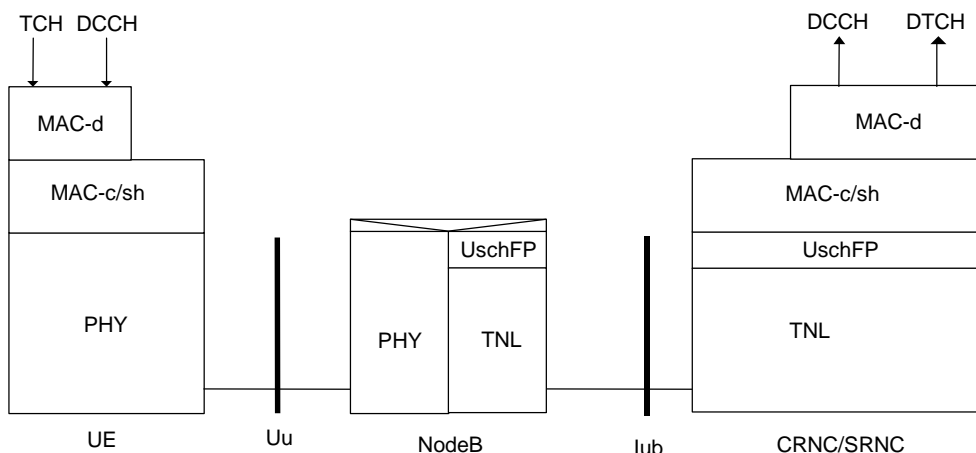


Figure 21: USCH Co-incident Controlling and Serving RNC

The Shared MAC (MAC-c/sh) entity in the RNC receives MAC-c/sh PDU from the peer MAC-c/sh entity in the UE using the services of the Interworking Function in the Node B, and the USCH Frame Protocol (USCH FP) entity. The USCH FP entity in the Node B adds header information to form a USCH FP PDU that is transported to the RNC over a transport bearer.

An Interworking Function (IWF) in the Node B interworks the received USCH PHY entity into an USCH frame to be transmitted by the USCH FP entity over the Iub interface. USCH scheduling is performed by MAC-c/sh in UE and by C-RRC in the CRNC.

Figure 22 shows the protocol model for the USCH transport channel with separate Controlling and Serving RNC. In this case, Iur USCH Frame Protocol is used to interwork the MAC-c/sh at the Controlling RNC with the MAC-d at the Serving RNC.

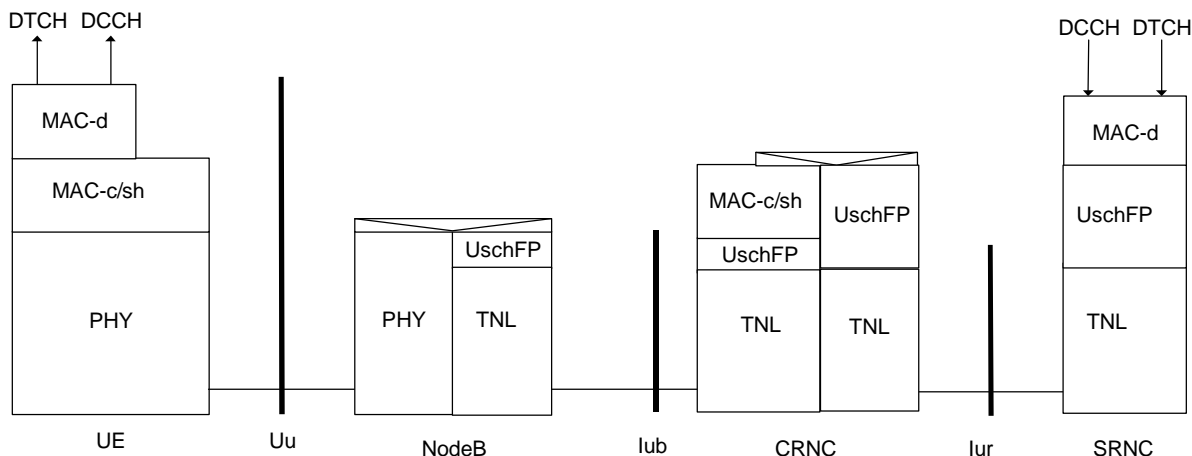


Figure 22: USCH: Separate Controlling and Serving RNC

### 11.2.7 HS-DSCH Transport Channel

Figure 23 shows the protocol model for the HS-DSCH transport channel when the Controlling and Serving RNC are coincident.

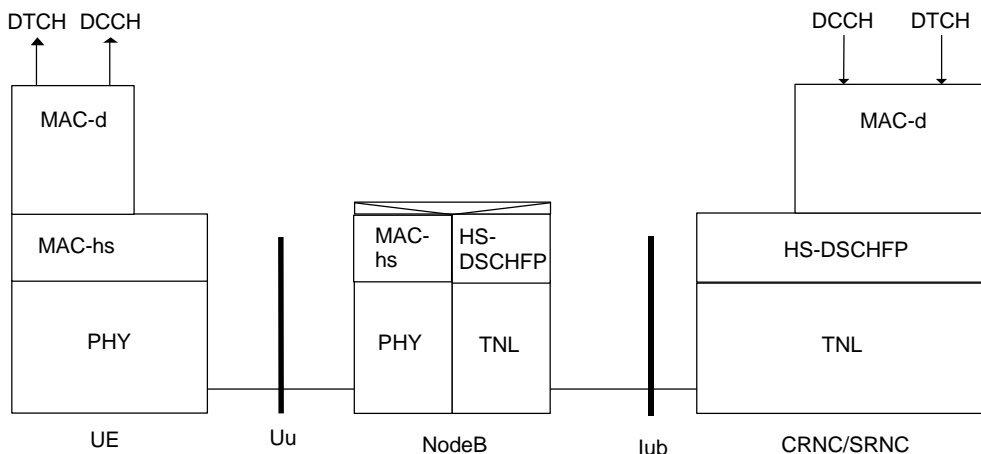
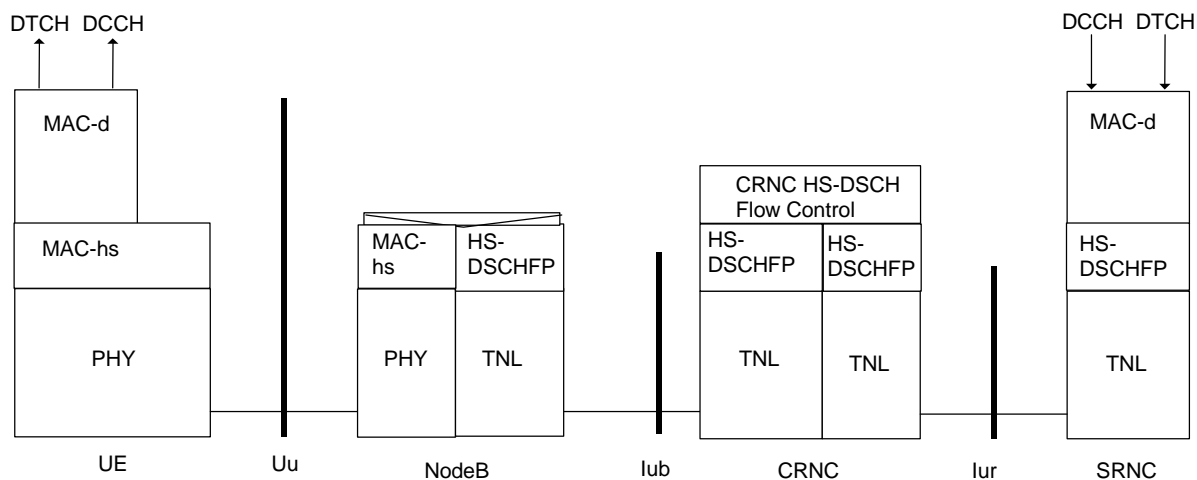


Figure 23: HS-DSCH Co-incident Controlling and Serving RNC

The High Speed MAC (MAC-hs) entity in the Node B transfers MAC-hs PDU to the peer MAC-hs entity in the UE over the Uu interface. The Dedicated MAC (MAC-d) entity in the RNC transfers MAC-d PDUs to the MAC-hs in the Node B using the services of the HS-DSCH Frame Protocol (HS-DSCH FP) entity. The HS-DSCH FP entity adds header information to form a HS-DSCH FP PDU that is transported to the Node B over a transport bearer.

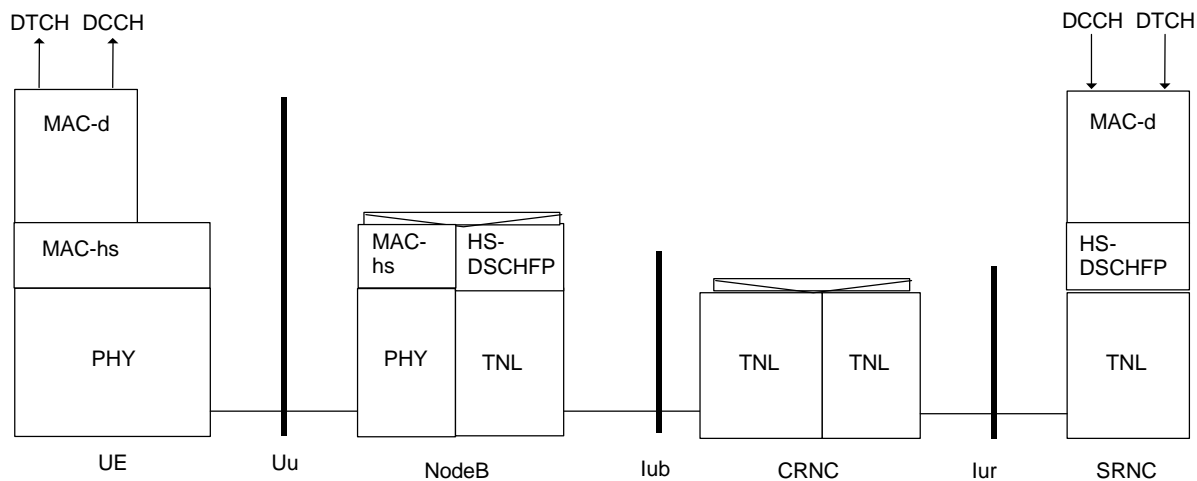
A Relaying Function in the Node B relays the HS-DSCH frame received by HS-DSCH FP entity to the MAC-hs entity. HS-DSCH scheduling is performed by MAC-hs in the Node B.

Figure 24 shows the protocol model for the HS-DSCH transport channel with separate Controlling and Serving RNC. In this case, Iur HS-DSCH Frame Protocol is used to interwork the Flow Control function at the Controlling RNC with the MAC-d at the Serving RNC. Also in this case, Iub HS-DSCH Frame Protocol is used to interwork the MAC-hs at the Node B with the Flow Control function at the Controlling RNC.



**Figure 24: HS-DSCH: Separate Controlling and Serving RNC (configuration with CRNC flow control)**

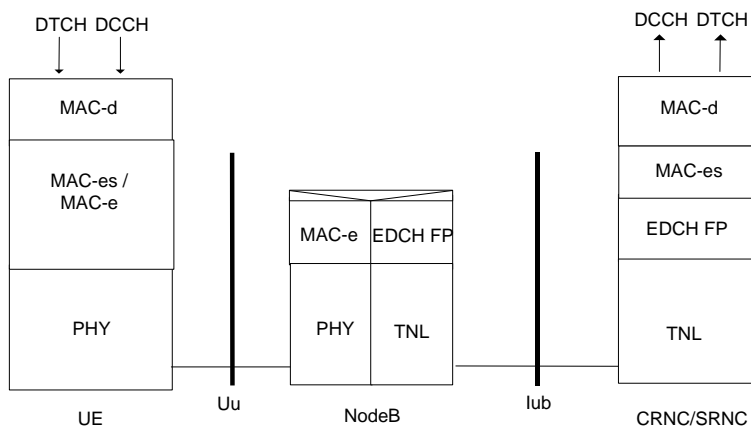
Figure 25 shows the protocol model for the HS-DSCH transport channel with the Controlling RNC user plane RNL being bypassed. In this case, the CRNC does not have any user plane RNL function for the HS-DSCH. MAC-d in SRNC is located directly above MAC-hs in Node B, i.e. in the HS-DSCH user plane RNL, the SRNC is directly connected to the Node B, thus bypassing the CRNC user plane RNL. The CRNC performs only user plane TNL functions.



**Figure 25: HS-DSCH: Serving RNC with bypassed Controlling RNC (configuration without CRNC flow control)**

## 11.2.xx E-DCH Transport Channel [FDD]

Figure x1 shows the protocol model for the E-DCH transport channel when the Controlling and Serving RNC are co-incident.



**Figure x1: E-DCH Co-incident Controlling and Serving RNC**

The E-DCH MAC (MAC-e/MAC-es) entity in the UE transfers MAC-e PDUs to the peer MAC-e entity in the Node B and MAC-es PDUs to the peer MAC-es entity in the RNC using the services of the Physical Layer.

The E-DCH FP entity adds header information to form a E-DCH FP PDU that is transported to the RNC over a transport bearer.

An Interworking Function (IWF) in the Node B interworks the E-DCH frame received by the MAC-e entity into the E-DCH Frame Protocol (E-DCH FP) entity. E-DCH scheduling is performed by MAC-e in the Node B and reordering is performed by MAC-es in the RNC.

## 12 UTRAN Performance Requirements

### 12.1 UTRAN delay requirements

Void.

## Annex A (informative): Change history

Change history					
TSG RAN#	Version	CR	Tdoc RAN	New Version	Subject/Comment
RAN_05	-	-	-	3.0.0	Approved at TSG RAN #5 and placed under Change Control
RAN_06	3.0.0	-	RP-99735	3.1.0	Approved at TSG RAN #6
RAN_06	3.0.0	-	RP-99736	3.1.0	Approved at TSG RAN #6
RAN_06	3.0.0	-	RP-99737	3.1.0	Approved at TSG RAN #6
RAN_06	3.0.0	-	RP-99738	3.1.0	Approved at TSG RAN #6
RAN_07	3.1.0	-	RP-000073	3.2.0	Approved at TSG RAN #7
RAN_08	3.2.0	-	RP-000231	3.3.0	Approved at TSG RAN #8
RAN_09	3.3.0	013 014 015 016 017	RP-000370	3.4.0	Approved at TSG RAN #9
RAN_10	3.4.0	018 019	RP-000607	3.5.0	Approved at TSG RAN #10
RAN_11	3.5.0	020 021	RP-010107	3.6.0	Approved at TSG RAN #11

Change history							
Date	TSG #	TSG Doc.	CR	Rev	Subject/Comment	Old	New
March 01	11	RP-010164	23	1	Approved at TSG RAN #11 and placed under Change Control	-	4.0.0
June 01	12	RP-010370	025, 028, 032		Approved at TSG RAN #12	4.0.0	4.1.0
June 01	12	RP-010389	026, 029		Approved at TSG RAN #12	4.0.0	4.1.0
June 01	12	RP-010403	030		Approved at TSG RAN #12 and placed under Change Control	4.1.0	5.0.0
09/2001	13	RP-010575	033		Uplink power control for LCR TDD	5.0.0	5.1.0
09/2001	13	RP-010575	038		Clarification of coordinated DCHs	5.0.0	5.1.0
03/2002	15	RP-020221	046		New UE identifier for MAC-c/sh multiplexing for DSCH	5.1.0	5.2.0
03/2002	15	RP-020189	044	2	Introduction of IP Transport in UTRAN	5.1.0	5.2.0
03/2002	15	RP-020190	039	2	HSDPA Additions for REL-5	5.1.0	5.2.0
03/2002	15	RP-020195	045	1	NNSF Functional Description	5.1.0	5.2.0
06/2002	16	RP-020422	047		HSDPA-related changes	5.2.0	5.3.0
06/2002	16	RP-020421	048		Corrections on ATM-IP interoperability scenarios	5.2.0	5.3.0
06/2002	16	RP-020399	051		New UE identifier for Shared Channel handling for TDD DSCH/USCH	5.2.0	5.3.0
06/2002	16	RP-020421	052		Introduction of IP transport in UTRAN	5.2.0	5.3.0
06/2002	16	RP-020421	053	2	Independence of RNL and TNL	5.2.0	5.3.0
09/2002	17	RP-020605	055	1	Clarification on ALCAP Identifiers	5.3.0	5.4.0
09/2002	17	RP-020627	056	1	Introduction of Iur-g	5.3.0	5.4.0
09/2002	17	RP-020625	057	1	Introduction of the Access Control Function: SNA	5.3.0	5.4.0
09/2002	17	RP-020628	059		Introduction of HS-DSCH RNTI in TS25.401	5.3.0	5.4.0
12/2002	18	RP-020750	062		Definition of URA	5.4.0	5.5.0
12/2002	18	RP-020764	064	1	Corrections to the SNA Access Control Function	5.4.0	5.5.0
03/2003	19	RP-030084	065		CR on revising the definition of SAS to support all REL-4 UE positioning methods	5.5.0	6.0.0
06/2003	20	RP-030317	068	1	Correction to HS-DSCH transport in case of SRNC not coincident with DRNC and without flow control in the DRNC	6.0.0	6.1.0
12/2003	22	RP-030675	076	1	NAS/AS issue for shared networks in connected mode	6.1.0	6.2.0
06/2004	24	RP-040182	084	1	Introduction of Iu and Iur support of Network Assisted Cell Change from UTRAN to GERAN	6.2.0	6.3.0
06/2004	24	RP-040254	086		Completion of the REL-5 IP Transport WI	6.2.0	6.3.0
09/2004	25	RP-040303	087	1	Introduction of Iuant into UTRAN architecture for control of RET Antennas	6.3.0	6.4.0
09/2004	25	RP-040297	091		Terminology correction of IP ALCAP CR	6.3.0	6.4.0





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## Foreword

This Technical Specification (TS) has been produced by the 3<sup>rd</sup> Generation Partnership Project (3GPP).

The contents of the present document are subject to continuing work within the TSG and may change following formal TSG approval. Should the TSG modify the contents of the present document, it will be re-released by the TSG with an identifying change of release date and an increase in version number as follows:

Version x.y.z

where:

- x the first digit:
  - 1 presented to TSG for information;
  - 2 presented to TSG for approval;
  - 3 or greater indicates TSG approved document under change control.
- y the second digit is incremented for all changes of substance, i.e. technical enhancements, corrections, updates, etc.
- z the third digit is incremented when editorial only changes have been incorporated in the document.

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# 1 Scope

The present document is an introduction to the TSG RAN TS 25.42x series of UMTS Technical Specifications that define the Iur Interface. It is a logical interface for the interconnection of two Radio Network Controller (RNC) components of the UMTS Terrestrial Radio Access Network (UTRAN) for the UMTS system.

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# 2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

- [1] 3GPP TS 25.427: "UTRAN Iub/Iur Interface User Plane Protocol for DCH Data Streams".
- [2] 3GPP TS 25.425: "UTRAN Iur Interface: User Plane Protocols for Common Transport Channel Data Streams".
- [3] 3GPP TS 25.421: "UTRAN Iur Interface: Layer 1".
- [4] 3GPP TS 25.422: "UTRAN Iur Interface: Signalling Transport".
- [5] 3GPP TS 25.423: "UTRAN Iur Interface: RNSAP Signalling".
- [6] 3GPP TS 25.424: "UTRAN Iur Interface: Data Transport & Transport Signalling".
- [7] 3GPP TS 25.401: "UTRAN Overall Description".
- [8] 3GPP TS 25.426: "UTRAN Iur & Iub Interface: Data Transport & Transport Signalling for DCH Data Streams".
- [9] ITU-T Recommendation Q.711 (7/96): "Functional description of the signalling connection control part".
- [10] ITU-T Recommendation Q.712 (7/96): "Definition and function of signalling connection control part messages".
- [11] ITU-T Recommendation Q.713 (7/96): "Signalling connection control part formats and codes".
- [12] ITU-T Recommendation Q.714 (7/96): "Signalling connection control part procedures".
- [13] 3GPP TS 23.003: "Numbering, Addressing and Identification".
- [14] ITU-T Recommendation Q.2630.1 (12/99): "AAL type 2 Signalling Protocol (Capability Set 1)".
- [15] Void
- [16] Void
- [17] 3GPP TR 43.930: "Iur-g interface; Stage 2".

[xx] [3GPP TS 25.309: "FDD Enhanced Uplink; Overall description; Stage 2"](#).

## 3 Definitions and abbreviations

### 3.1 Definitions

None

### 3.2 Abbreviations

For the purposes of the present document, the following abbreviations apply:

AAL2	ATM Adaptation Layer type 2
AAL5	ATM Adaptation Layer type 5
ALCAP	Access Link Control Application Part
ATM	Asynchronous Transfer Mode
BSS	Base Station Subsystem
CPCH	Common Packet Channel
CRNC	Controlling RNC
CTP	Common Transport Protocol
DCH	Dedicated Transport Channel
DL	Downlink
DRNC	Drift Radio Network Controller
DRNS	Drift Radio Network Subsystem
DSCH	Downlink Shared Channel
<u>E-DCH</u>	<u>Enhanced Dedicated Channel</u>
EDGE	Enhanced Data rates for GSM Evolution
FACH	Forward Access Channel
FFS	For Further Study
GERAN	GSM/EDGE Radio Access Network
GSM	Global System for Mobile communications
GT	Global Title
<u>HARQ</u>	<u>Hybrid Automatic Repeat Request</u>
HS-DSCH	High Speed Downlink Shared Channel
IP	Internet Protocol
MAC	Medium Access Control
MTP3-B	Message Transfer Part level 3 (for Q.2140)
PLMN	Public Land Mobile Network
QoS	Quality of Service
RACH	Random Access Channel
RF	Radio Frequency
RNC	Radio Network Controller
RNS	Radio Network Subsystem
RNSAP	Radio Network Subsystem Application Part
RRC	Radio Resource Control
SCCP	Signalling Connection Control Part
SPC	Signalling Point Code
SRNC	Serving Radio Network Controller
SRNS	Serving Radio Network Subsystem
SS7	Signalling System N° 7
SSCF-NNI	Service Specific Co-ordination Function – Network Node Interface
SSCOP	Service Specific Connection Oriented Protocol
SSN	Sub-System Number
STC	Signalling Transport Converter
UDP	User Datagram Protocol
UE	User Equipment
UL	Up-link
UMTS	Universal Mobile Telecommunication System
URA	UTRAN Registration Area
USCH	Uplink Shared Channel
UTRAN	UMTS Terrestrial Radio Access Network

## 3.3 Specification Notations

For the purposes of the present document, the following notations apply:

[FDD]	This tagging of a word indicates that the word preceding the tag "[FDD]" applies only to FDD. This tagging of a heading indicates that the heading preceding the tag "[FDD]" and the section following the heading applies only to FDD.
[TDD]	This tagging of a word indicates that the word preceding the tag "[TDD]" applies only to TDD, including 3.84Mcps TDD and 1.28Mcps TDD. This tagging of a heading indicates that the heading preceding the tag "[TDD]" and the section following the heading applies only to TDD, including 3.84Mcps TDD and 1.28Mcps TDD.
[3.84Mcps TDD]	This tagging of a word indicates that the word preceding the tag "[3.84Mcps TDD]" applies only to 3.84Mcps TDD. This tagging of a heading indicates that the heading preceding the tag "[3.84Mcps TDD]" and the section following the heading applies only to 3.84Mcps TDD.
[1.28Mcps TDD]	This tagging of a word indicates that the word preceding the tag "[1.28Mcps TDD]" applies only to 1.28Mcps TDD. This tagging of a heading indicates that the heading preceding the tag "[1.28Mcps TDD]" and the section following the heading applies only to 1.28Mcps TDD.
[FDD - ...]	This tagging indicates that the enclosed text following the "[FDD - " applies only to FDD. Multiple sequential paragraphs applying only to FDD are enclosed separately to enable insertion of TDD specific (or common) paragraphs between the FDD specific paragraphs.
[TDD - ...]	This tagging indicates that the enclosed text following the "[TDD - " applies only to TDD including 3.84Mcps TDD and 1.28Mcps TDD. Multiple sequential paragraphs applying only to TDD are enclosed separately to enable insertion of FDD specific (or common) paragraphs between the TDD specific paragraphs.
[3.84Mcps TDD - ...]	This tagging indicates that the enclosed text following the "[3.84Mcps TDD - " applies only to 3.84Mcps TDD. Multiple sequential paragraphs applying only to 3.84Mcps TDD are enclosed separately to enable insertion of FDD and TDD specific (or common) paragraphs between the 3.84Mcps TDD specific paragraphs.
[1.28Mcps TDD - ...]	This tagging indicates that the enclosed text following the "[1.28Mcps TDD - " applies only to 1.28Mcps TDD. Multiple sequential paragraphs applying only to 1.28Mcps TDD are enclosed separately to enable insertion of FDD and TDD specific (or common) paragraphs between the 1.28Mcps TDD specific paragraphs.
Procedure	When referring to a procedure in the specification, the Procedure Name is written with the first letters in each word in upper case characters followed by the word "procedure", e.g. RNSAP Basic Mobility Procedures.
Message	When referring to a message in the specification, the MESSAGE NAME is written with all letters in upper case characters followed by the word "message", e.g. RADIO LINK SETUP REQUEST message.
Frame	When referring to a control or data frame in the specification, the CONTROL/DATA FRAME NAME is written with all letters in upper case characters followed by the words "control/data frame", e.g. DCH data frame.

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## 4 General Aspects

### 4.1 Introduction

The logical connection that exists between any two RNCs within the UTRAN is referred to as the Iur interface.

## 4.2 Iur Interface General Principles

The general principles for the specification of the Iur interface are as follows:

- The Iur interface should be open;
- The Iur interface shall support the exchange of signalling information between two RNCs, in addition the interface may need to support one or more Iur data streams;
- From a logical standpoint, the Iur is a point-to-point interface between two RNCs within the UTRAN. A point-to-point logical interface should be feasible even in the absence of a physical direct connection between the two RNCs.

## 4.3 Iur Interface Specification Objectives

### 4.3.1 General

The I<sub>ur</sub> interface specifications shall facilitate the following:

- inter-connection of RNCs supplied by different manufacturers;
- support of continuation between RNSs of the UTRAN services offered via the Iu interface;
- separation of I<sub>ur</sub> interface Radio Network functionality and Transport Network functionality to facilitate introduction of future technology.

### 4.3.2 Addressing of RNSs over the Iur Interface

- For an RRC connection using a dedicated channel, the Iur standard shall allow the addition / deletion of radio links supported by cells belonging to any RNS within the PLMN.
- The specification of the Iur interface shall allow an RNC to address any other RNC within the PLMN for establishing a signalling bearer over Iur.
- The specification of the Iur interface shall allow an RNC to address any other RNC within the PLMN for establishing user data bearers for Iur data streams.

RNSAP shall allow different kinds of addressing schemes to be used for the signalling bearer.

## 4.4 Iur Interface Capabilities

### 4.4.1 Radio application related signalling

The Iur interface provides capability to support radio interface mobility between RNSs, of UEs having a connection with UTRAN. This capability includes the support of handover, radio resource handling and synchronisation between RNSs.

### 4.4.2 Iub/Iur DCH data streams

The Iur interface provides the means for transport of uplink and downlink Iub/Iur DCH frames carrying user data and control information between SRNC and Node B (DRNS), via the DRNC.

In the UTRAN, one DCH data stream always corresponds to a bi-directional transport channel. Although the TFS is configured separately for each DCH direction and a DCH could be configured with e.g. only a zero-bit transport format in one direction, the DCH is always treated as a bi-directional transport channel in the UTRAN. As a result, two uni-directional Uu DCH transport channels with opposite directions can be mapped to either one or two DCH transport channels in the UTRAN.

### 4.4.3 Iur RACH/CPCH [FDD] data streams

The Iur interface provides the means for transport of uplink RACH and [FDD - CPCH] transport frames between DRNC and SRNC.

### 4.4.4 Iur DSCH data streams

An Iur DSCH data stream corresponds to the data carried on one DSCH transport channel for one UE. A UE may have multiple Iur DSCH data streams.

The Iur interface provides a means of transporting down link MAC-c/sh SDUs. In addition, the interface provides a means to the SRNC for queue reporting and a means for the DRNC to allocate capacity to the SRNC.

### 4.4.5 Iur USCH data streams [TDD]

An Iur USCH data stream corresponds to the data carried on one USCH transport channel for one UE. A UE may have multiple Iur USCH data streams.

### 4.4.6 Iur FACH data streams

The Iur interface provides the means for transport of downlink FACH transport frames between SRNC and DRNC.

### 4.4.7 Iur HS-DSCH data streams

An Iur HS-DSCH data stream corresponds to the data carried on one MAC-d flow for one UE. A UE may have multiple Iur HS-DSCH data streams.

The Iur interface provides a means of transporting down link MAC-d PDUs. In addition, the interface provides a means to the SRNC for queue reporting and a means for the DRNC to allocate capacity to the SRNC.

### 4.4.x Iub/Iur E-DCH [FDD] data streams

The Iur interface provides the means for transport of Iub/Iur E-DCH frames carrying user data between NodeB (DRNS) and SRNC, via the DRNC.

An Iur E-DCH data stream corresponds to the data carried on one MAC-d flow for one UE. A UE may have multiple E-DCH data streams. In addition, the interface provides the following:

- A means for the Node B to indicate the number of HARQ retransmissions to the SRNC [11];

- A means to indicate to the SRNC, for the purposes of re-ordering, the CFN and Subframe Number that have been added by the Node B in the DRNS[1].

## 4.5 Iur Interface Characteristics

### 4.5.1 Uses of SCCP

#### 4.5.1.1 General

The SCCP is used to support signalling messages between two RNCs. One user function of the SCCP, called Radio Network Subsystem Application Part (RNSAP), is defined. The RNSAP uses one signalling connection per DRNC and UE where a UE is having one or more active radio links for the transfer of layer 3 messages. RNSAP also uses one signalling connection per RNC providing common measurements and information to a particular RNC (i.e. if

measurements and information are transferred in both directions between a pair of RNCs, then two SCCP connections are used).

Both connectionless and connection-oriented procedures are used to support the RNSAP. TS 25.423 explain whether connection oriented or connectionless services should be used for a layer 3 procedure.

The following subclauses describe the use of SCCP connections for RNSAP transactions. Subclause 4.5.1.2 describes the connection establishment procedures. Subclause 4.5.1.3 describes the connection establishment procedures initiated from SRNC. Subclause 4.5.1.4 describes the connection release procedures. Subclause 4.5.1.5 describes abnormal conditions.

#### 4.5.1.2 SCCP connection establishment

A new SCCP connection is established when information related to the communication between a UE and the network has to be exchanged between two RNCs, and no SCCP connection exists between the two RNCs involved, for the concerned UE.

In this case, the SCCP connection is established by the SRNC.

A new SCCP connection is established when a request for common measurements or information is made towards a particular RNC and no SCCP connection for common measurements and information transfer has been established from the RNC requesting the measurements or information towards the one providing the measurements or the information.

In this case, the SCCP connection is established by the RNC requesting the measurements or the information.

#### 4.5.1.3 Establishment procedure initiated from the SRNC

The SCCP signalling connection establishment is initiated, by the SRNC, when the SRNC needs to request dedicated resources, i.e. a DCH, from a DRNC.

##### **Initiation**

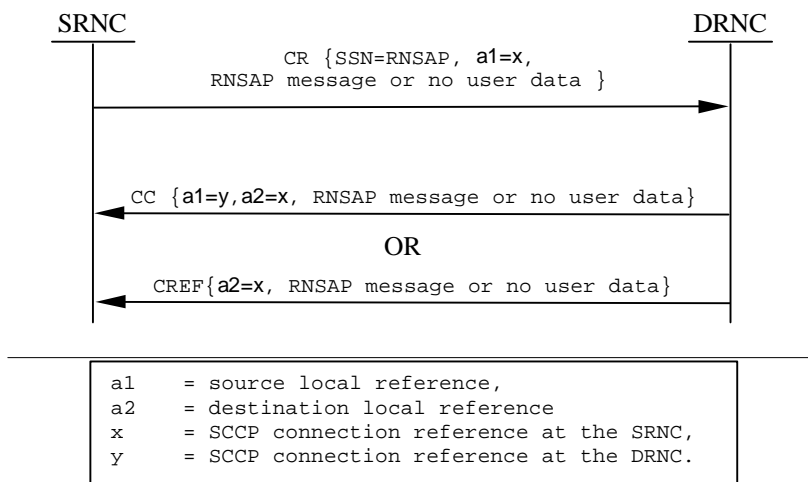
- The SRNC sends the SCCP: CR message to the DRNC. The RADIO LINK SETUP REQUEST message may be included in the user data field of an SCCP Connection Request message.

##### **Termination**

1. Successful outcome:
  - The SCCP Connection Confirm message, which may optionally contain a connection oriented RNSAP message in the user data field, is returned to the SRNC.
2. Unsuccessful outcome:
  - If the SCCP signalling connection establishment fails, an SCCP Connection Refusal message will be sent back to the SRNC. This message may optionally contain a connection oriented RNSAP message.

For more information on how the RNSAP procedure Radio Link Setup is handled, please see the procedure Radio Link Setup in TS 25.423 [5].





**Figure 1: Setting-up of SCCP Signalling Connection**

#### 4.5.1.3A Establishment procedure initiated from an RNC requesting common measurements or information

The SCCP signalling connection establishment is initiated, by an RNC, when the RNC needs to request common measurements or provision of information from another RNC and there is no signalling bearer existing for this purpose. For the description below, the RNC requesting the measurements or the information is called RNC1 and the RNC being requested to provide the measurements or the information is called RNC2.

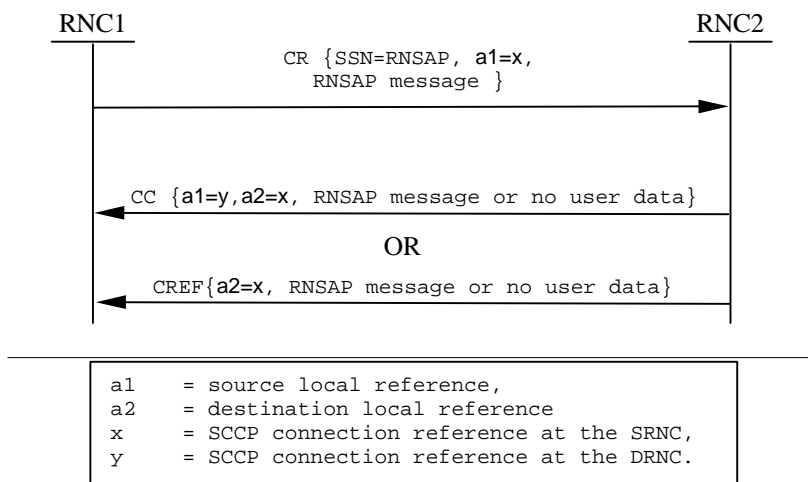
##### Initiation

- The RNC1 sends the SCCP: CR message to the RNC2. The COMMON MEASUREMENT INITIATION REQUEST or the INFORMATION EXCHANGE INITIATION REQUEST message shall be included in the user data field of the SCCP Connection Request message.

##### Termination

1. Successful outcome:
  - The SCCP Connection Confirm message, which may optionally contain a connection oriented RNSAP message in the user data field, is returned to the RNC1.
2. Unsuccessful outcome:
  - If the SCCP signalling connection establishment fails, an SCCP Connection Refusal message will be sent back to the RNC1. This message may optionally contain a connection oriented RNSAP message.

RNSAP Common Measurement Initiation and Information Exchange Initiation procedures are described in [5].



**Figure 1a: Setting-up of SCCP Signalling Connection**

#### 4.5.1.4 SCCP connection release

An SCCP connection related to a specific UE is released in all normal release cases when the SRNC realises that a given signalling connection is no longer required.

The SRNC sends an SCCP Released message.

The procedure may be initiated at the SRNC side and the DRNC side in any abnormal release case.

An SCCP connection used for common measurements and information exchanges is released in all normal release cases when the RNC1 (see 4.5.1.3A) determines that a given signalling connection is no longer required. The RNC1 sends an SCCP Released message.

The procedure may be initiated at the RNC 1 side and the RNC 2 side in any abnormal release case.

#### 4.5.1.5 General SCCP Abnormal Conditions

##### 4.5.1.5.1 SCCP bearer failure

If a user-out-of-service information or signalling-point-inaccessible information is received by the RNSAP, no new attempt to establish SCCP connections or to send SCCP Connectionless messages towards the affected signalling point (indicated by the affected signalling point code) will be started until the corresponding user-in-service information or signalling-point-accessible information is received.

When a user-out-of-service information or signalling-point-inaccessible is received by an RNC, an optional timer may be started. When the timer expires, the RNC shall take actions as described in [5] Annex X. When the user-in-service or signalling-point-accessible is received, the timer is stopped.

##### 4.5.1.5.2 SCCP connection failure

If for any reason an SCCP connection is released, the optional timer expires or a connection refusal is received while any of the RNSAP procedures are being performed or while a dedicated resource is still allocated, this shall be handled by the RNC as described in [5] Annex X.2.

## 4.5.2 SCCP Addressing Scheme

### 4.5.2.1 General

RNSAP may use SSN, SPC and/or GT and any combination of them as addressing schemes for the SCCP. Which of the available addressing schemes to use for the SCCP is an operator matter.

When GT addressing is utilised, the following settings shall be used:

- SSN Indicator = 1 (RNSAP SSN as defined in [13] shall always be included);
- Global Title Indicator = 0100 (GT includes translation type, numbering plan, encoding scheme and nature of address indicator);
- Translation Type = 0000 0000 (not used);
- Numbering Plan = 0001 (E.163/4);
- Nature of Address Indicator = 000 0100 (International Significant Number);
- Encoding Scheme = 0001 or 0010 (BCD, odd or even);
- Routing indicator = 0 or 1 (route on GT or PC/SSN).

When used, the GT shall be the E.164 address of the relevant node.

---

# 5 Functions of the I<sub>ur</sub> Interface Protocols

## 5.1 Functional List

The list of functions on the I<sub>ur</sub> interface is the following:

1. Transport Network Management.
2. Traffic management of Common Transport Channels:
  - Preparation of Common Transport Channel resources;
  - Paging.
3. Traffic Management of Dedicated Transport Channels:
  - Radio Link Setup/ Addition/ Deletion;
  - Measurement Reporting.
4. Traffic Management of Downlink Shared Transport Channels and [TDD - Uplink Shared Transport Channels]:
  - Radio Link Setup/ Addition/ Deletion;
  - Capacity Allocation.
5. Measurement reporting for common and dedicated measurement objects.
6. Information exchange of UTRAN and GERAN information.
7. Tracing of various events related to a UE.

## 5.2 Functional Split over Iur

### 5.2.1 Combining/Splitting

DRNS may perform combining/splitting of data streams communicated via its cells. SRNS performs combining/splitting of Iur data streams received from/sent to DRNS(s), and data streams communicated via its own cells.

The UL combining of information streams may be performed using any suitable algorithm, for example:

- [FDD - based on maximum ratio algorithm (maximum ratio combining)];
- [FDD - based on quality information associated to each TBS (selection-combining)];
- [TDD - based on the presence/absence of the signal (selection)].

The internal DRNS handling of combining (respectively splitting) of Iub (respectively Iur) DCH frames is controlled by the DRNS.

### 5.2.2 Control of Combining/Splitting Topology

When requesting the addition of a new cell for a UE-UTRAN connection [for DCH](#), the RNC of the SRNS (i.e. the SRNC) can explicitly request to the RNC of the DRNS (i.e. the DRNC) a new Iur data stream, in which case the combining and splitting function within the DRNS is not used for that cell. The SRNC can also explicitly request from the DRNC the use of the combining and splitting function inside the DRNS for that cell. Otherwise, the DRNS takes the decision whether combining and splitting function is used inside the DRNS for that cell i.e. whether a new Iur data stream shall be added or not.

[For E-DCH \[FDD\] combining at the DRNC is not allowed. However, combining in NodeB of the DRNS is mandatory where applicable as described in \[xx\].](#)

### 5.2.3 Handling of DRNS Hardware Resources

Allocation and control of DRNS hardware resources, used for Iur data streams and radio interface transmission/reception in DRNS is performed by DRNS.

### 5.2.4 Allocation of Physical Channels

Allocation of physical channels in cells belonging to DRNS is performed in DRNS.

### 5.2.5 UpLink Power Control

This group of functions controls the level of the uplink transmitted power in order to minimise uplink interference and keep the quality of the connections. If the connection involves both a SRNS and a DRNS the function UL Outer Loop Power Control (located in the SRNC) sets the target quality for the UL Inner Loop Power Control function (located in Node B [for DCH \[FDD\]](#)). [For E-DCH \[FDD\], the DRNS \(NodeB\) reports the number of HARQ retransmissions to SRNC as an input to the Outer Loop Power Control function.](#)

### 5.2.6 Down-Link Power Control

This group of functions controls the level of the downlink transmitted power. In FDD it is also used to correct the downlink power drifting between several radio links. SRNC regularly (or under some algorithms) sends the target down link power reference based on the measurement report from UE.

### 5.2.7 Admission Control

Admission control in a DRNC is implicitly invoked during radio link setup/modify.

Information on UL interference and DL power on cells controlled by the DRNC should be available across Iur.

Additional information exchanges between admission control functions located in different RNCs are for further study.

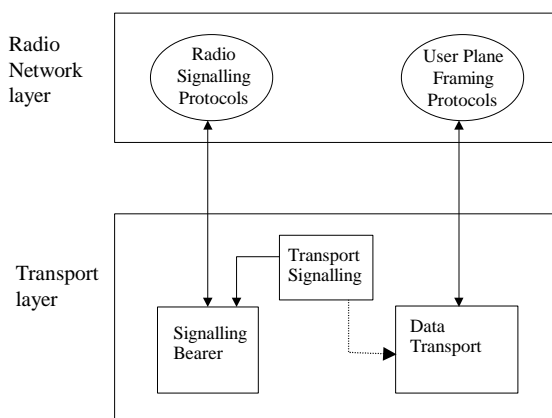
## 5.2.8 Radio Protocol Functional Split

Iur supports the radio protocol functional split between SRNC and DRNC.

# 6 I<sub>ur</sub> Interface Protocols

## 6.1 General

There shall exist a clear separation between the Radio Network Layer and the Transport Layer. Therefore, the radio network signalling and Iur data streams are separated from the data transport resource and traffic handling as shown in Figure 2. Data transport resource and traffic handling is controlled by Transport Signalling. The Transport Signalling is carried by a Signalling Bearer over the Iur interface.



**Figure 2: Separation of Radio Network Protocols and transport over Iur**

## 6.2 Radio Signalling Protocols

### 6.2.1 RNSAP Protocol

The protocol responsible for providing signalling information across the Iur interface is called the Radio Network Subsystem Application Part (RNSAP). A subset of RNSAP is used over the Iur-g interface.

The RNSAP is terminated by the two RNCs inter-connected via the Iur interface RNSAP Procedure Modules. In addition, the RNSAP is terminated by a RNC and a BSS supporting Iu mode inter-connected via the Iur-g interface.

RNSAP procedures are divided into four modules as follows:

1. RNSAP Basic Mobility Procedures;
2. RNSAP DCH Procedures;
3. RNSAP Common Transport Channel Procedures;
4. RNSAP Global Procedures.

The Basic Mobility Procedures module contains procedures used to handle the mobility within UTRAN as well as to handle mobility in case of UTRAN/GERAN interworking.

The DCH Procedures module contains procedures that are used to handle DCHs, DSCH, HS-DSCH, [\[FDD E-DCH\]](#) and [\[TDD - USCHs\]](#) between two RNSs. If procedures from this module are not used in a specific Iur, then the usage of DCH, DSCH, HS-DSCH, [\[FDD E-DCH\]](#) and [\[TDD - USCH\]](#) traffic between corresponding RNSs is not possible.

The Common Transport Channel Procedures module contains procedures that are used to control common transport channel data streams (excluding the DSCH, HS-DSCH, [E-DCH](#) and USCH) over Iur interface.

The Global Procedures module contains procedures that are not related to a specific UE. The procedures in this module are in contrast to the above modules involving two peer CRNCs. The procedures in this module are also used in cases involving one RNC and one BSS.

## 6.3 User Plane Frame Protocols

### 6.3.1 Iub/Iur DCH Frame Protocol

There are two types of Iub/Iur DCH FP frames:

- DCH data frame;
- DCH control frame.

The contents of the Iub/Iur DCH data frame include:

- Transport Block Sets;
- Quality estimate.

The contents of the Iur DCH control frame include:

- Measurement reports;
- Power control information;
- Synchronisation information.

For a more detailed description of the Iur/Iub DCH frame protocol refer to 'UTRAN Iur & Iub Interface User Plane Protocol for DCH Data Streams' [1].

### 6.3.2 Iur DSCH Frame Protocol

There are two types of Iur DSCH FP frames:

- DSCH data frame;
- DSCH control frames.

The contents of the Iur DSCH data frame include:

- MAC-c/sh SDUs;
- User Buffer Status.

The contents of the Iur DSCH control frame include:

- Flow control Information (UL);
- Capacity Request Information (DL).

For a more detailed description of the Iur DSCH frame protocol refer to 'UTRAN Iur Interface User Plane protocols for Common Transport Channel Data Streams' [2].

### 6.3.3 Iur USCH Frame Protocol [TDD]

There is one type of Iur USCH FP frames:

- USCH data frame.

The contents of the Iur USCH data frame include:

- MAC-c/sh SDUs.

For a more detailed description of the Iur USCH frame protocol refer to 'UTRAN Iur Interface User Plane protocols for Common Transport Channel Data Streams' [2].

### 6.3.4 Iur RACH/CPCH [FDD] Frame Protocol

For a more detailed description of the Iur RACH framing protocol refer to 'UTRAN Iur Interface User Plane protocols for Common Transport Channel Data Streams' [2].

### 6.3.5 Iur FACH Frame Protocol

For a more detailed description of the Iur FACH framing protocol refer to 'UTRAN Iur Interface User Plane protocols for Common Transport Channel Data Streams' [2].

### 6.3.6 Iur HS-DSCH Frame Protocol

There are two types of Iur HS-DSCH FP frames:

- HS-DSCH data frame;
- HS-DSCH control frames.

The contents of the Iur HS-DSCH data frame include:

- MAC-d PDUs;
- User Buffer Status.

The contents of the Iur HS-DSCH control frame include:

- Flow control Information (UL);
- Capacity Request Information (DL).

For a more detailed description of the Iur HS-DSCH frame protocol refer to 'UTRAN Iur Interface User Plane protocols for Common Transport Channel Data Streams' [2].

### 6.3.x Iur E-DCH Frame Protocol

There is **one type** of Iur E-DCH FP frames:

- **E-DCH data frame**!

The contents of the Iur E-DCH data frame include:

- **Mac-es PDUs (multiplexed)**;
- **Number of HARQ retransmissions**
- **CFN and Sub frame number**

For a more detailed description of the Iur E-DCH frame protocol refer to 'UTRAN Iur Interface User Plane Protocols for **DCH** Data Streams' [1].

## 6.4 Mapping of Frame Protocols onto transport bearers

### **DCH**

One Iur DCH data stream is carried on one transport bearer except in the case of co-ordinated DCHs in which case a set of co-ordinated DCHs are multiplexed onto the same transport bearer.

<b>DSCH</b>	One Iur DSCH data stream is carried on one transport bearer
<b>HS-DSCH</b>	One Iur HS-DSCH data stream is carried on one transport bearer
<b>[FDD - E-DCH]</b>	<u>One Iur E-DCH data stream is carried on one transport bearer. For each E-DCH data stream, a transport bearer must be established over the Iur interface.</u>
<b>[TDD - USCH]</b>	One Iur USCH data stream is carried on one transport bearer.]
<b>RACH/CPCH[FDD]</b>	Multiple RACH/CPCH[FDD] data streams may be carried on one transport bearer.
<b>FACH</b>	Multiple FACH data streams may be carried on one transport bearer.

RACH/CPCH[FDD] and FACH data streams for one UE are carried on same transport bearer.

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## 7 DRNS logical Model over I<sub>ur</sub>

### 7.1 Overview

The model in Figure 3 shows the Drift Radio Network System as seen from the SRNC. It is modelled as a «black box» with a set of Radio Links on the Uu side of the box and another set of User Plane access ports on the Iur side of the box. The Radio Links are connected to the Iur user ports via the internal transport mechanisms of the DRNS. Operations for controlling the connections between ports are sent from the SRNC to the DRNC via an Iur Control Plane port.



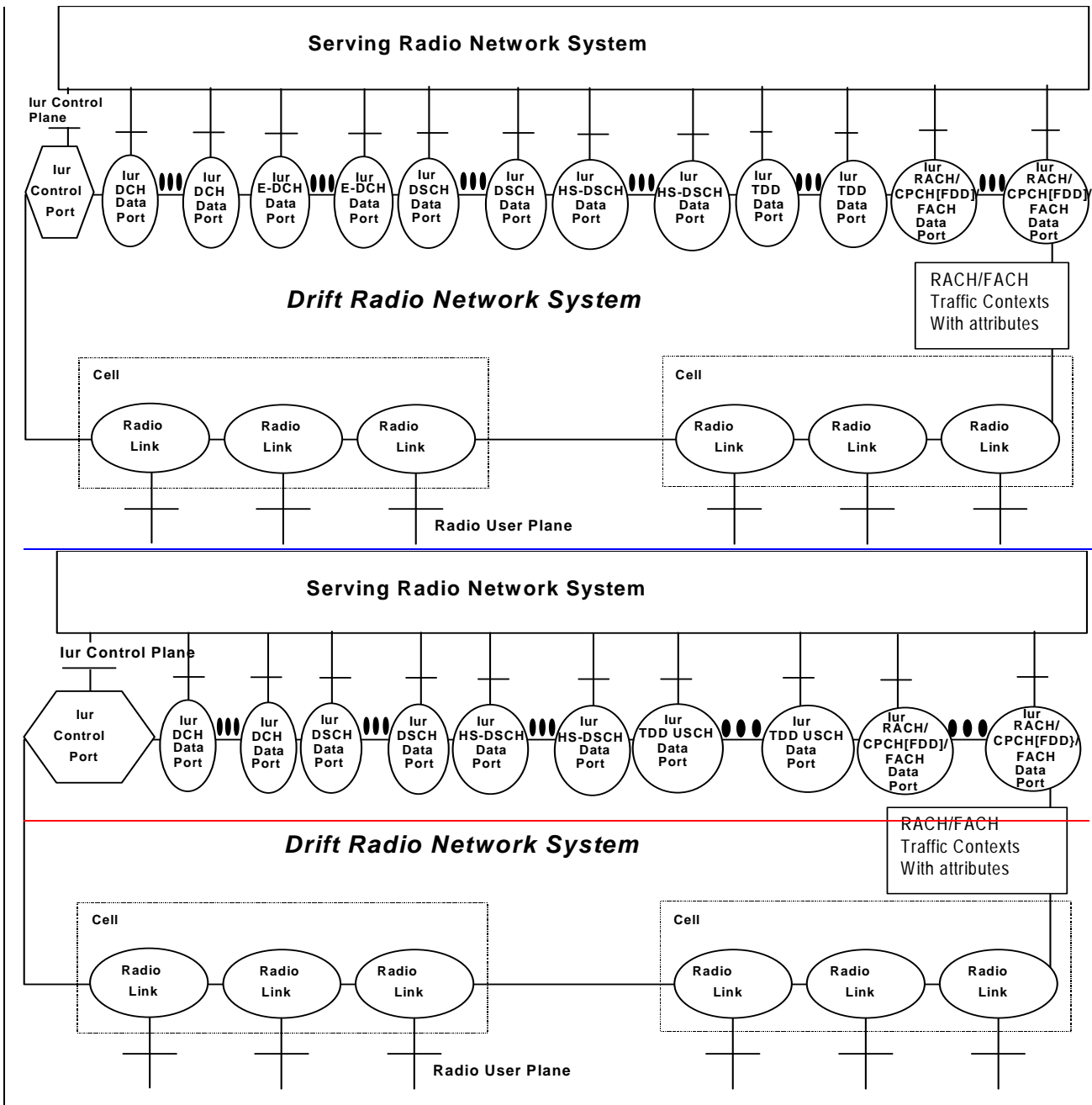


Figure 3: Drift RNS Logical Model

## 7.2 Logical Model Elements

### 7.2.1 Radio Link

A Radio Link represents a User Plane access point on the UTRAN side of the Uu interface between the User Equipment and the UTRAN.

The semantics of a Radio Link include the following:

- It is created, destroyed, and added by SRNC.
- It can be attached to one or more Iur Data Ports at any given time.
- Its resources are allocated and controlled by the DRNS.

## 7.2.2 Cell

It is defined by:

- A Cell identifier.

The semantics of a Cell include the following:

- It is created and destroyed by administrative procedures.

## 7.2.3 Iur DCH Data Port

One Iur DCH Data port represents one user plane transport bearer. One user plane transport bearer will carry only one DCH data stream except in the case of co-ordinated DCHs, in which case the data streams of all co-ordinated DCHs shall be multiplexed on one and the same user plane transport bearer.

The semantics of an Iur DCH Data Port include the following:

- It is created and destroyed by administrative procedures when transport facilities are added to, or deleted from, the Iur interface between the SRNS and DRNS. It can also be created and destroyed dynamically using dynamically setup transport bearers to add or remove transport facilities.
- It is assigned and released by the SRNC in reaction to requests for bearer services from the UE.
- It may be attached to one or more Radio Links. When attached to Radio Links in the downlink direction, it acts as a point-to-multipoint connection for diversity transmission. When attached to multiple Radio Links in the uplink direction, it acts as a multipoint-to-point connection for diversity reception [FDD].
- The transmit and receive combining/splitting resources required to implement the point-to-multipoint and multipoint-to-point connections are controlled by the DRNS [FDD].
- The Iur DCH Data Stream emanating from the Iur DCH Data Port terminates in the SRNS connected to DRNS.

## 7.2.4 Iur DSCH Data Port

One Iur DSCH Data port represents one bi-directional Iur user plane transport bearer. One Iur user plane transport bearer will carry only one DSCH data stream.

## 7.2.5 Iur USCH Data Port [TDD]

One Iur USCH Data port represents one Iur user plane transport bearer. One Iur user plane transport bearer will carry only one USCH data stream.

## 7.2.6 Iur RACH/CPCH [FDD]/FACH Data Port

The Iur RACH/CPCH [FDD]/FACH data port represents a transport bearer and is identified with a transport bearer identity.

## 7.2.7 Iur Control Port

An Iur Control Port represents the Control Plane access point on the Iur interface between the SRNS and the DRNS. It is defined by:

- A transport bearer channel identifier.

The semantics of an Iur Control Port include the following:

- It is created via administrative procedures when the Iur interface is created.

## 7.2.8 Iur HS-DSCH Data Port

One Iur HS-DSCH Data port represents one bi-directional Iur user plane transport bearer. One Iur user plane transport bearer will carry only one HS-DSCH data stream.

### 7.2.x Iur E-DCH Data Port [FDD]

One Iur E-DCH Data port represents one bi-directional Iur user plane transport bearer. One Iur user plane transport bearer will carry only one E-DCH data stream. It is assigned and released by the SRNC in reaction to requests for bearer services from the UE. It may be attached to one or more Radio Links. When attached to multiple Radio Links in the uplink direction, the receive combining resources required to implement the multipoint-to-point connections is in the NodeB of the DRNS

## 8 I<sub>ur</sub> Interface Protocol Structure

The Iur interface protocol architecture consists of two functional layers:

- Radio Network Layer, defines the procedures related to the interaction of two RNCs within a PLMN. The radio network layer consists of a Radio Network Control Plane and a Radio Network User Plane.
- Transport layer, defines procedures for establishing physical connections between two RNCs within a PLMN.

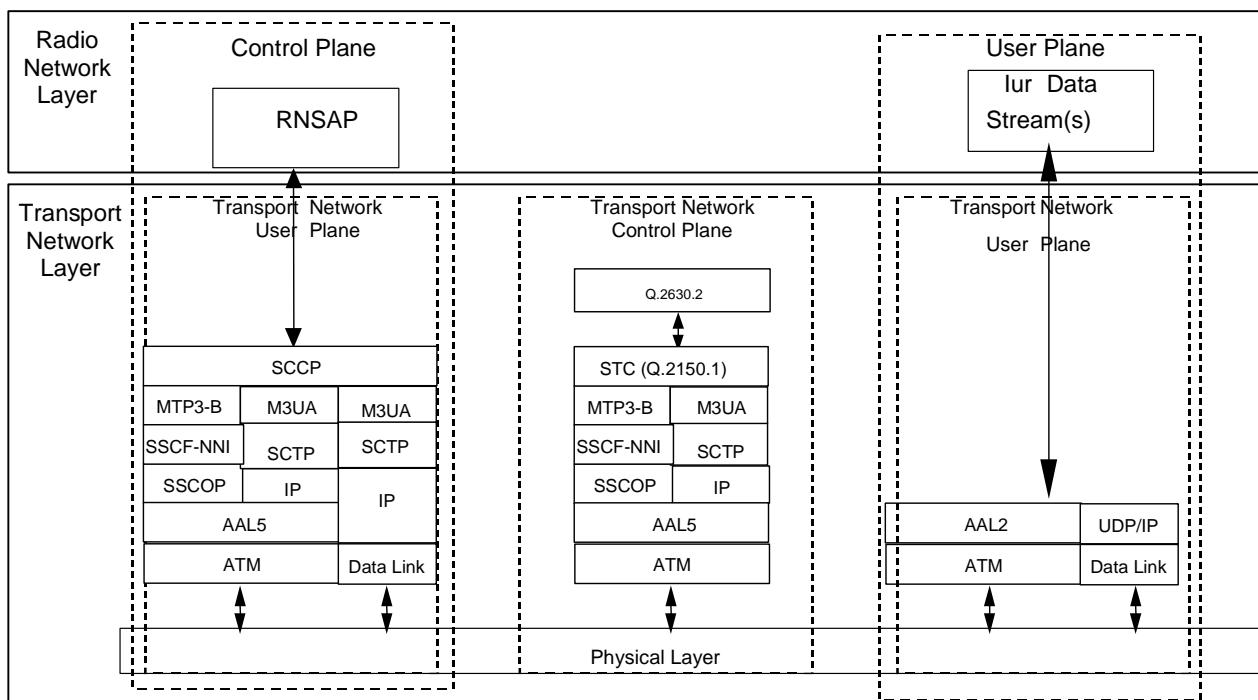


Figure 4: Iur Interface Protocol Structure

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## 9 Other I<sub>ur</sub> Interface Specifications

### 9.1 UTRAN Iur Interface: Layer 1 (TS 25.421)

3GPP TS 25.421 specifies the range of physical layer technologies that may be used to support the Iur interface and the Iur-g interface.

### 9.2 UTRAN Iur Interface: Signalling Transport (TS 25.422)

3GPP TS 25.422 specifies the signalling bearers for the RNSAP for Iur Interface and for Iur-g interface.

### 9.3 UTRAN Iur Interface: RNSAP Specification (TS 25.423)

3GPP TS 25.423 specifies the RNSAP protocol for radio network control plane signalling over the Iur interface and over the Iur-g interface.

### 9.4 UTRAN Iur Interface: Data Transport and Transport Signalling for Common Transport Channel Data Streams (TS 25.424)

3GPP TS 25.424 specifies the transport bearers for the user plane of the Iur interface. It also specifies the ALCAP protocol used to control these transport bearers.

### 9.5 UTRAN Iur Interface: User Plane Protocols for Common Transport Channel Data Streams (TS 25.425)

3GPP TS 25.425 specifies the user plane frame handling protocol for the common channels on Iur interface.

### 9.6 UTRAN Iur & Iub Interface: Data Transport and Transport Signalling for DCH Data Streams (TS 25.426)

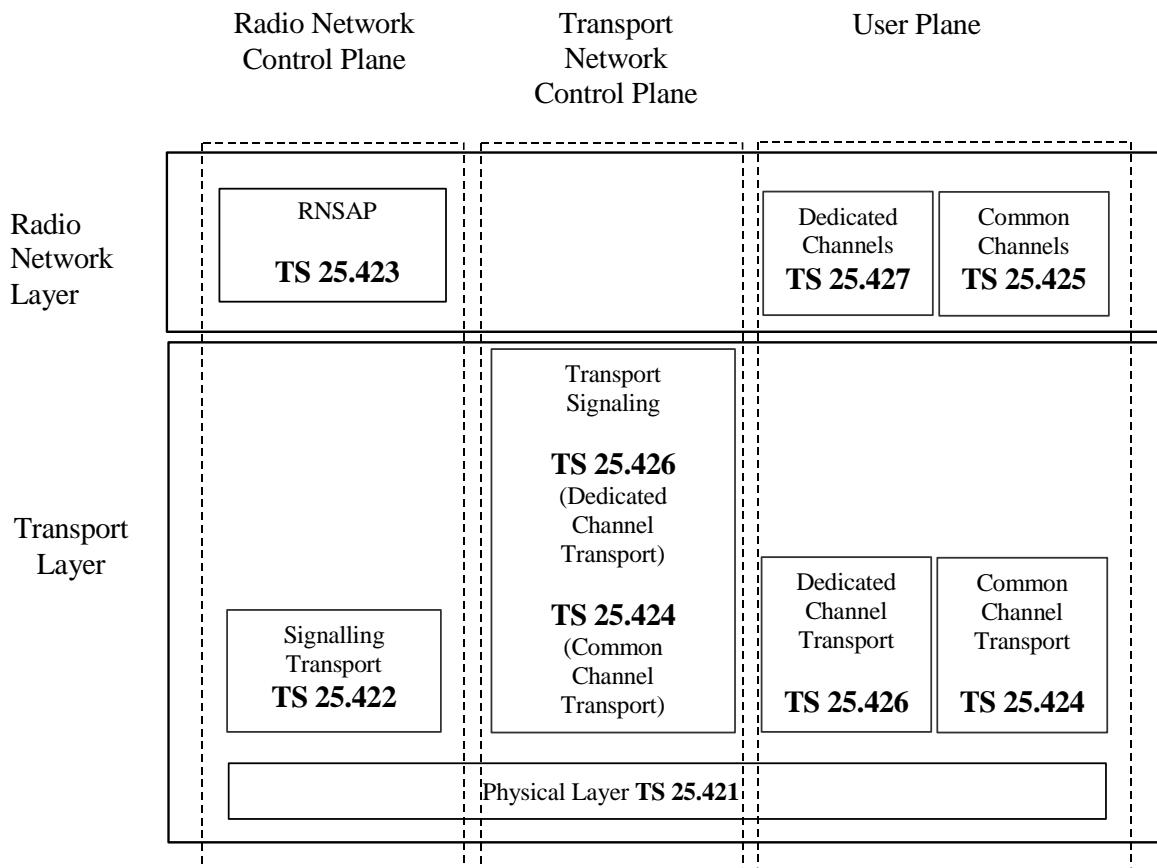
3GPP TS 25.426 specifies the transport bearers for the user plane of the Iub/Iur interface. It also specifies the ALCAP protocol used to control these transport bearers.

### 9.7 UTRAN Iur & Iub Interface: User Plane Protocols for DCH Data Streams (TS 25.427)

3GPP TS 25.427 specifies the user plane frame handling protocol for the dedicated channels on Iub/Iur interface.

### 9.8 Summary of UTRAN Iur Interface Technical Specifications

The relationship between the technical specifications that define the UTRAN Iur interface is shown in Figure 5.



**Figure 5: Iur Interface Technical Specifications**

## Annex A (informative): Change history

Change history					
TSG RAN#	Version	CR	Tdoc RAN	New Version	Subject/Comment
RAN_06	-	-	RP-99796	3.0.0	Approved at TSG RAN #6 and placed under Change Control
RAN_07	3.0.0	-	RP-000097	3.1.0	Approved at TSG RAN #7 (6 approved CRs)
RAN_09	3.1.0	008	RP-000378	3.2.0	Approved at TSG RAN #9
RAN_11	3.2.0	009	RP-010115	3.3.0	Approved at TSG RAN #11

Change history							
Date	TSG #	TSG Doc.	CR	Rev	Subject/Comment	Old	New
March 01	11	RP-010160	012		Approved at TSG RAN #11 and placed under Change Control	-	4.0.0
March 01	11	RP-010162	011		Approved at TSG RAN #11 and placed under Change Control	-	4.0.0
March 01	11	RP-010163	010		Approved at TSG RAN #11 and placed under Change Control	-	4.0.0
March 01	11	RP-010159	014		Approved at TSG RAN #11 and placed under Change Control	-	4.0.0
12/2001	14	RP-010853	016		Reference corrections	4.0.0	4.1.0
12/2001	14	RP-010853	018		25.420 v4.0.0 CR Clarification of the Combining/Splitting function	4.0.0	4.1.0
12/2001	14	RP-010853	020	1	Addition of "Specification Notations" Section	4.0.0	4.1.0
12/2001	14	RP-010853	022	2	Behaviour of the RNC in case of Iur transmission failure	4.0.0	4.1.0
03/2002	15	RP-020168	026	1	SCCP Connection Release Initiated by RNC in Abnormal case	4.1.0	4.2.0
03/2002	15	RP-020190	023	1	HSDPA Additions for REL-5	4.2.0	5.0.0
03/2002	15	RP-020189	024	4	Introduction of IP transport to UTRAN	4.2.0	5.0.0
09/2002	17	RP-020627	028	1	Introduction of Iur-g	5.0.0	5.1.0
12/2003	22	-	-	-	Introduction of Release 6 specification	5.1.0	6.0.0
06/2004	24	RP-040182	040		Inclusion of Information Transfer as an Iur function	6.0.0	6.1.0
06/2004	24	RP-040183	041	1	Trace Parameter Propagation over the Iur	6.0.0	6.1.0
06/2004	24	RP-040254	043		Completion of the Rel-5 IP transport WI	6.0.0	6.1.0

## CHANGE REQUEST

⌘ **25.423 CR 1007** ⌘ rev **2** ⌘ Current version: **6.3.0** ⌘

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

**Proposed change affects:** UICC apps  ME  Radio Access Network  Core Network

<b>Title:</b>	⌘ Changes for Introducing E-DCH		
<b>Source:</b>	⌘ RAN3		
<b>Work item code:</b>	⌘ EDCH-lurlub	<b>Date:</b>	⌘ 18/11/2004
<b>Category:</b>	⌘ <b>B</b>	<b>Release:</b>	⌘ Rel-6
	Use <u>one</u> of the following categories: <b>F</b> (correction) <b>A</b> (corresponds to a correction in an earlier release) <b>B</b> (addition of feature), <b>C</b> (functional modification of feature) <b>D</b> (editorial modification) Detailed explanations of the above categories can be found in 3GPP <a href="#">TR 21.900</a> .		Use <u>one</u> of the following releases: <b>Ph2</b> (GSM Phase 2) <b>R96</b> (Release 1996) <b>R97</b> (Release 1997) <b>R98</b> (Release 1998) <b>R99</b> (Release 1999) <b>Rel-4</b> (Release 4) <b>Rel-5</b> (Release 5) <b>Rel-6</b> (Release 6) <b>Rel-7</b> (Release 7)

<b>Reason for change:</b>	⌘ This CR introduces mechanisms to support enhanced uplink dedicated channels for FDD.
<b>Summary of change:</b>	⌘ Introduction of E-DCH for FDD into RNSAP
<b>Consequences if not approved:</b>	⌘

<b>Clauses affected:</b>	⌘ 2, 3.3, 5.1, 8.3, 9.1.3.1, 9.1.4, 9.1.5.1, 9.1.6.1, 9.1.7.1, 9.1.8.1, 9.1.11.1, 9.1.12.1, 9.1.16.1, 9.1.17.1, 9.1.41, 9.1.42, 9.1.58, New clauses: 9.2.1.30OC, 9.2.1.30OD, 9.2.1.30OE, 9.2.1.30OF, 9.2.1.30OH, 9.2.1.30V, 9.2.1.30W, 9.2.1.45C, 9.2.1.63X, 9.2.2.4B, 9.2.2.4C, 9.2.2.4D, 9.2.2.4E, 9.2.2.4F, 9.2.2.19e, 9.2.2.24e, 9.2.2.25X								
<b>Other specs</b>	<table border="1" style="display: inline-table; vertical-align: middle;"> <tr><td style="width: 20px;">Y</td><td style="width: 20px;">N</td></tr> <tr><td style="text-align: center;">X</td><td></td></tr> </table> Other core specifications	Y	N	X		⌘	25.430 v 6.0.0 CR 56 25.433 v 6.3.0 CR 1059 25.401 v 6.4.0 CR 94 25.420 v 6.1.0 CR 45 25.427 v 6.0.0 CR 95		
Y	N								
X									
<b>affected:</b>	<table border="1" style="display: inline-table; vertical-align: middle;"> <tr><td style="width: 20px;">Y</td><td style="width: 20px;">N</td></tr> <tr><td></td><td style="text-align: center;">X</td></tr> <tr><td></td><td style="text-align: center;">X</td></tr> </table> Test specifications O&M Specifications	Y	N		X		X		
Y	N								
	X								
	X								
<b>Other comments:</b>	⌘ Note, that no E-DCH specific changes to ASN.1 are included								





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# 1 Scope

The present document specifies the radio network layer signalling procedures of the control plane between RNCs in UTRAN, between RNC in UTRAN and BSS in GERAN Iu mode and between BSSs in GERAN Iu mode.

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# 2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

- [1] 3GPP TS 23.003: "Numbering, addressing and identification".
- [2] 3GPP TS 25.413: "UTRAN Iu Interface RANAP Signalling".
- [3] 3GPP TS 25.426: "UTRAN Iur and Iub Interface Data Transport & Transport Layer Signalling for DCH Data Streams".
- [4] 3GPP TS 25.427: "UTRAN Iur and Iub Interface User Plane Protocols for DCH Data Streams".
- [5] 3GPP TS 25.435: "UTRAN Iub interface User Plane Protocols for Common Transport Channel Data Streams".
- [6] 3GPP TS 25.104: "UTRA (BS) FDD; Radio transmission and Reception".
- [7] 3GPP TS 25.105: "UTRA (BS) TDD; Radio Transmission and Reception".
- [8] 3GPP TS 25.211: "Physical Channels and Mapping of Transport Channels onto Physical Channels (FDD)".
- [9] 3GPP TS 25.212: "Multiplexing and Channel Coding (FDD)".
- [10] 3GPP TS 25.214: "Physical Layer Procedures (FDD)".
- [11] 3GPP TS 25.215: "Physical Layer – Measurements (FDD)".
- [12] 3GPP TS 25.221: "Physical Channels and Mapping of Transport Channels onto Physical Channels (TDD)".
- [13] 3GPP TS 25.223: "Spreading and Modulation (TDD)".
- [14] 3GPP TS 25.225: "Physical Layer – Measurements (TDD)".
- [15] 3GPP TS 25.304: "UE Procedures in Idle Mode"
- [16] 3GPP TS 25.331: "RRC Protocol Specification".
- [17] 3GPP TS 25.402: "Synchronisation in UTRAN, Stage 2".
- [18] ITU-T Recommendation X.680 (12/97): "Information technology - Abstract Syntax Notation One (ASN.1): Specification of basic notation".
- [19] ITU-T Recommendation X.681 (12/97): "Information technology - Abstract Syntax Notation One (ASN.1): Information object specification".

- [20] ITU-T Recommendation X.691 (12/97): "Information technology - ASN.1 encoding rules - Specification of Packed Encoding Rules (PER)".
- [21] 3GPP TS 25.213: "Spreading and modulation (FDD)".
- [22] 3GPP TS 25.224: "Physical Layer Procedures (TDD)".
- [23] 3GPP TS 25.133: "Requirements for support of Radio Resource management (FDD)".
- [24] 3GPP TS 25.123: "Requirements for support of Radio Resource management (TDD)".
- [25] 3GPP TS 23.032: "Universal Graphical Area Description (GAD)".
- [26] 3GPP TS 25.302: "Services Provided by the Physical Layer".
- [27] 3GPP TS 25.213: "Spreading and modulation (FDD)".
- [28] 3GPP TR 25.921: "Guidelines and Principles for Protocol Description and Error Handling".
- [29] GSM TS 05.05: "Digital cellular telecommunications system (Phase 2+); Radio transmission and reception".
- [30] ICD-GPS-200: "Navstar GPS Space Segment/Navigation User Interface".
- [31] RTCM-SC104: "RTCM Recommended Standards for Differential GNSS Service (v.2.2)".
- [32] 3GPP TS 25.425: "UTRAN Iur and Iub Interface User Plane Protocols for Common Transport Channel data streams".
- [33] IETF RFC 2460 "Internet Protocol, Version 6 (IPv6) Specification".
- [34] IETF RFC 768 "User Datagram Protocol", (8/1980)
- [35] 3GPP TS 25.424: " UTRAN Iur Interface Data Transport & Transport Signalling for Common Transport Channel Data Streams".
- [36] 3GPP TS 44.118: "Mobile radio interface layer 3 specification; Radio Resource Control (RRC) Protocol Iu mode".
- [37] 3GPP TR 43.930: "Iur-g interface; Stage 2".
- [38] 3GPP TS 48.008: "Mobile-services Switching Centre - Base Station System (MSC - BSS) interface; Layer 3 specification".
- [39] 3GPP TS 43.051: "GSM/EGDE Radio Access Network; Overall description - Stage 2".
- [40] 3GPP TS 25.401: "UTRAN Overall Description".
- [41] 3GPP TS 25.321: "MAC protocol specification".
- [42] 3GPP TS 25.306: "UE Radio Access capabilities".
- [43] 3GPP TS 25.101: " User Equipment (UE) radio transmission and reception (FDD)".
- [44] IETF RFC 2474 "Definition of the Differentiated Services Field (DS Field) in the IPv4 and IPv6 Headers".
- [45] IETF RFC 2475 "An Architecture for Differentiated Services".
- [46] 3GPP TS 25.222: "Multiplexing and Channel Coding (TDD)".
- [47] 3GPP TS 44.060: "General Packet Radio Service (GPRS); Mobile Station (MS) - Base Station System (BSS) interface; Radio Link Control/Medium Access Control (RLC/MAC) protocol".
- [48] 3GPP TS 32.421: "Subscriber and equipment trace: Trace concepts and requirements".
- [49] 3GPP TS 32.422: "Subscriber and equipment trace: Trace control and Configuration Management".

[50] [3GPP TS 25.309: "FDD Enhanced Uplink; Overall description; Stage 2"](#).

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## 3 Definitions, Symbols and Abbreviations

### 3.1 Definitions

For the purposes of the present document, the following terms and definitions apply:

**Elementary Procedure:** RNSAP protocol consists of Elementary Procedures (EPs). An Elementary Procedure is a unit of interaction between two RNCs. An EP consists of an initiating message and possibly a response message. Two kinds of EPs are used:

- **Class 1:** Elementary Procedures with response (success or failure);
- **Class 2:** Elementary Procedures without response.

For Class 1 EPs, the types of responses can be as follows:

Successful

- A signalling message explicitly indicates that the elementary procedure has been successfully completed with the receipt of the response.

Unsuccessful

- A signalling message explicitly indicates that the EP failed.

Class 2 EPs are considered always successful.

**Prepared Reconfiguration:** A Prepared Reconfiguration exists when the Synchronised Radio Link Reconfiguration Preparation procedure has been completed successfully. The Prepared Reconfiguration does not exist any more after either of the procedures Synchronised Radio Link Reconfiguration Commit or Synchronised Radio Link Reconfiguration Cancellation has been completed.

**UE Context:** The UE Context contains the necessary information for the DRNC/DBSS to communicate with a specific UE. The UE Context is created by the Radio Link Setup procedure or by the Uplink Signalling Transfer procedure when the UE makes its first access in a cell controlled by the DRNS/DBSS. The UE Context is deleted by the Radio Link Deletion procedure, by the Common Transport Channel Resources Release procedure, or by the Downlink Signalling Transfer procedure when neither any Radio Links nor any common transport channels are established towards the concerned UE. The UE Context is identified by the SCCP Connection for messages using connection oriented mode of the signalling bearer and the D-RNTI for messages using connectionless mode of the signalling bearer, unless specified otherwise in the procedure text.

**Distant RNC Context:** The Distant RNC context is created by the first Common Measurement Initiation Procedure or Information Exchange Initiation Procedure initiated by one RNC/BSS and requested from another RNC/BSS. The Distant RNC Context is deleted after the Common Measurement Termination, the Common Measurement Failure, the Information Exchange Termination or the Information Exchange Failure procedure when there is no more Common Measurement and no more Information to be provided by the requested RNC/BSS to the requesting RNC/BSS. The Distant RNC Context is identified by an SCCP connection as, for common measurements and information exchange, only the connection oriented mode of the signalling bearer is used.

**Signalling radio bearer 2:** The signalling radio bearer 2 is used by the UE to access a GERAN cell in order to perform RRC procedures [36].

### 3.2 Symbols

Void.

### 3.3 Abbreviations

For the purposes of the present document, the following abbreviations apply:

A-GPS	Assisted-GPS
ALCAP	Access Link Control Application Part
ASN.1	Abstract Syntax Notation One
BER	Bit Error Rate
BLER	Block Error Rate
BSS	Base Station Subsystem
CBSS	Controlling BSS
CCCH	Common Control Channel
CCPCH	Common Control Physical Channel
CCTrCH	Coded Composite Transport Channel
CFN	Connection Frame Number
C-ID	Cell Identifier
CM	Compressed Mode
CN	Core Network
CPCH	Common Packet Channel
CPICH	Common Pilot Channel
CRNC	Controlling RNC
DBSS	Drift BSS
C-RNTI	Cell Radio Network Temporary Identifier
CS	Circuit Switched
CTFC	Calculated Transport Format Combination DCH Dedicated Channel
DGPS	Differential GPS
DL	Downlink
DPC	Downlink Power Control
DPCCH	Dedicated Physical Control Channel
DPCH	Dedicated Physical Channel
DPDCH	Dedicated Physical Data Channel
DRAC	Dynamic Radio Access Control
DRNC	Drift RNC
DRNS	Drift RNS
D-RNTI	Drift Radio Network Temporary Identifier
DRX	Discontinuous Reception
DSCH	Downlink Shared Channel
Ec	Energy in single Code
<u>E-DCH</u>	<u>Enhanced UL DCH</u>
EDSCHPC	Enhanced Downlink Shared Channel Power Control
EP	Elementary Procedure
FACH	Forward Access Channel
FDD	Frequency Division Duplex
FN	Frame Number
FP	Frame Protocol
GERAN	GSM EDGE Radio Access Network
GA	Geographical Area
GAI	Geographical Area Identifier
GPS	Global Positioning System
GRA	GERAN Registration Area
GSM	Global System Mobile
HSDPA	High Speed Downlink Packet Access
HW	Hardware
IB	Information Block
ID	Identity or Identifier
IE	Information Element
IMSI	International Mobile Subscriber Identity
IP	Internet Protocol
IPDL	Idle Period DownLink
ISCP	Interference Signal Code Power
LAC	Location Area Code
LCR	Low Chip Rate (1.28 Mcps)

LCS	Location Services
MAC	Medium Access Control
MS	Mobile Station
NACC	Network Assisted Cell Change
NAS	Non Access Stratum
No	Reference Noise
NRT	Non Real Time
O&M	Operation and Maintenance
P(-)CCPCH	Primary CCPCH
PCH	Paging Channel
OTD	Observed Time Difference
P(-)CPICH	Primary CPICH
PCPCH	Physical Common Packet Channel
PCS	Personal Communication Services
PDSCH	Physical Downlink Shared Channel
PDU	Protocol Data Unit
PhCH	Physical Channel
PICH	Paging Indication Channel
Pos	Position or Positioning
PRACH	Physical Random Access Channel
PS	Packet Switched
QE	Quality Estimate
RAC	Routing Area Code
RACH	Random Access Channel
RAN	Radio Access Network
RANAP	Radio Access Network Application Part
RB	Radio Bearer
RL	Radio Link
RLC	Radio Link Control
RLS	Radio Link Set
RM	Rate Matching
RNC	Radio Network Controller
RNS	Radio Network Subsystem
RNSAP	Radio Network Subsystem Application Part
RNTI	Radio Network Temporary Identifier
RRC	Radio Resource Control
RT	Real Time
RSCP	Received Signal Code Power
SBSS	Serving BSS
Rx	Receive or Reception
Sat	Satellite
SCCP	Signalling Connection Control Part
S(-)CCPCH	Secondary CCPCH
SCH	Synchronisation Channel
SCTD	Space Code Transmit Diversity
SDU	Service Data Unit
SF	System Frame
SFN	System Frame Number
SHCCH	Shared Control Channel
SIR	Signal-to-Interference Ratio
SNA	Shared Network Area
SRB2	Signalling radio bearer 2
SRNC	Serving RNC
SRNS	Serving RNS
S-RNTI	Serving Radio Network Temporary Identifier
SSDT	Site Selection Diversity Transmission
STTD	Space Time Transmit Diversity
TDD	Time Division Duplex
TF	Transport Format
TFCI	Transport Format Combination Indicator
TFCS	Transport Format Combination Set
TFS	Transport Format Set

TGCFN	Transmission Gap Connection Frame Number
ToAWE	Time of Arrival Window Endpoint
ToAWS	Time of Arrival Window Startpoint
TPC	Transmit Power Control
TrCH	Transport Channel
TS	Time Slot
TSG	Technical Specification Group
TSTD	Time Switched Transmit Diversity
TTI	Transmission Time Interval
TX	Transmit or Transmission
UARFCN	UTRA Absolute Radio Frequency Channel Number
UDP	User Datagram Protocol
UC-ID	UTRAN Cell Identifier
UE	User Equipment
UL	Uplink
UMTS	Universal Mobile Telecommunications System
URA	UTRAN Registration Area
U-RNTI	UTRAN Radio Network Temporary Identifier
USCH	Uplink Shared Channel
UTRA	Universal Terrestrial Radio Access
UTRAN	Universal Terrestrial Radio Access Network

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## 4 General

### 4.1 Procedure Specification Principles

The principle for specifying the procedure logic is to specify the functional behaviour of the DRNC/CRNC exactly and completely. The SRNC functional behaviour is left unspecified. The Physical Channel Reconfiguration procedure, [TDD – the UE Measurement Initiation, the UE Measurement Reporting, UE Measurement Termination, UE Measurement Failure,] and the Reset procedure are an exception from this principle.

The following specification principles have been applied for the procedure text in subclause 8:

- The procedure text discriminates between:

1) Functionality which "shall" be executed

The procedure text indicates that the receiving node "shall" perform a certain function Y under a certain condition. If the receiving node supports procedure X but cannot perform functionality Y requested in the REQUEST message of a Class 1 EP, the receiving node shall respond with the message used to report unsuccessful outcome for this procedure, containing an appropriate cause value.

2) Functionality which "shall, if supported" be executed

The procedure text indicates that the receiving node "shall, if supported," perform a certain function Y under a certain condition. If the receiving node supports procedure X, but does not support functionality Y, the receiving node shall proceed with the execution of the EP, possibly informing the requesting node about the not supported functionality.

- Any required inclusion of an optional IE in a response message is explicitly indicated in the procedure text. If the procedure text does not explicitly indicate that an optional IE shall be included in a response message, the optional IE shall not be included. For requirements for including *Criticality Diagnostics* IE, see section 10. For examples on how to use the *Criticality Diagnostics* IE, see Annex C.

### 4.2 Forwards and Backwards Compatibility

The forwards and backwards compatibility of the protocol is assured by a mechanism in which all current and future messages, and IEs or groups of related IEs, include ID and criticality fields that are coded in a standard format that will not be changed in the future. These parts can always be decoded regardless of the standard version.

## 4.3 Source Signalling Address Handling

The sender of an RNSAP messages shall include the Source Signalling Address, i.e. the Signalling Address of the sending node.

## 4.4 Specification Notations

For the purposes of the present document, the following notations apply:

- [FDD] This tagging of a word indicates that the word preceding the tag "[FDD]" applies only to FDD. This tagging of a heading indicates that the heading preceding the tag "[FDD]" and the section following the heading applies only to FDD.
- [TDD] This tagging of a word indicates that the word preceding the tag "[TDD]" applies only to TDD, including 3.84Mcps TDD and 1.28Mcps TDD. This tagging of a heading indicates that the heading preceding the tag "[TDD]" and the section following the heading applies only to TDD, including 3.84Mcps TDD and 1.28Mcps TDD.
- [3.84Mcps TDD] This tagging of a word indicates that the word preceding the tag "[3.84Mcps TDD]" applies only to 3.84Mcps TDD. This tagging of a heading indicates that the heading preceding the tag "[3.84Mcps TDD]" and the section following the heading applies only to 3.84Mcps TDD.
- [1.28Mcps TDD] This tagging of a word indicates that the word preceding the tag "[1.28Mcps TDD]" applies only to 1.28Mcps TDD. This tagging of a heading indicates that the heading preceding the tag "[1.28Mcps TDD]" and the section following the heading applies only to 1.28Mcps TDD.
- [FDD - ...] This tagging indicates that the enclosed text following the "[FDD - " applies only to FDD. Multiple sequential paragraphs applying only to FDD are enclosed separately to enable insertion of TDD specific (or common) paragraphs between the FDD specific paragraphs.
- [TDD - ...] This tagging indicates that the enclosed text following the "[TDD - " applies only to TDD including 3.84Mcps TDD and 1.28Mcps TDD. Multiple sequential paragraphs applying only to TDD are enclosed separately to enable insertion of FDD specific (or common) paragraphs between the TDD specific paragraphs.
- [3.84Mcps TDD - ...] This tagging indicates that the enclosed text following the "[3.84Mcps TDD - " applies only to 3.84Mcps TDD. Multiple sequential paragraphs applying only to 3.84Mcps TDD are enclosed separately to enable insertion of FDD and TDD specific (or common) paragraphs between the 3.84Mcps TDD specific paragraphs.
- [1.28Mcps TDD - ...] This tagging indicates that the enclosed text following the "[1.28Mcps TDD - " applies only to 1.28Mcps TDD. Multiple sequential paragraphs applying only to 1.28Mcps TDD are enclosed separately to enable insertion of FDD and TDD specific (or common) paragraphs between the 1.28Mcps TDD specific paragraphs.
- Procedure When referring to an elementary procedure in the specification, the Procedure Name is written with the first letters in each word in upper case characters followed by the word "procedure", e.g. Radio Link Setup procedure.
- Message When referring to a message in the specification, the MESSAGE NAME is written with all letters in upper case characters followed by the word "message", e.g. RADIO LINK SETUP REQUEST message.
- IE When referring to an information element (IE) in the specification, the *Information Element Name* is written with the first letters in each word in upper case characters and all letters in Italic font followed by the abbreviation "IE", e.g. *Transport Format Set IE*.
- Value of an IE When referring to the value of an information element (IE) in the specification, the "Value" is written as it is specified in subclause 9.2 enclosed by quotation marks, e.g. "Abstract Syntax Error (Reject)" or "SSDT Active in the UE".

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## 5 RNSAP Services

### 5.1 RNSAP Procedure Modules

The Iur interface RNSAP procedures are divided into four modules as follows:

1. RNSAP Basic Mobility Procedures;
2. RNSAP **DedicatedCH** Procedures;
3. RNSAP Common Transport Channel Procedures;
4. RNSAP Global Procedures.

The Basic Mobility Procedures module contains procedures used to handle the mobility within UTRAN, within GERAN and between UTRAN and GERAN.

The **DedicatedCH** Procedures module contains procedures that are used to handle DCHs, DSCHs, and USCHs between two RNSs. If procedures from this module are not used in a specific Iur, then the usage of DCH, DSCH, and USCH traffic between corresponding RNSs is not possible.

The Common Transport Channel Procedures module contains procedures that are used to control common transport channel data streams (excluding the DSCH and USCH) over Iur interface.

The Global Procedures module contains procedures that are not related to a specific UE. The procedures in this module are in contrast to the above modules involving two peer CRNCs/CBSSs.

### 5.2 Parallel Transactions

Unless explicitly indicated in the procedure specification, at any instance in time one protocol peer shall have a maximum of one ongoing RNSAP DCH procedure related to a certain UE.

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## 6 Services Expected from Signalling Transport

The signalling transport shall provide two different service modes for the RNSAP.

1. Connection oriented data transfer service. This service is supported by a signalling connection between two RNCs. It shall be possible to dynamically establish and release signalling connections based on the need. Each active UE shall have its own signalling connection. The signalling connection shall provide in sequence delivery of RNSAP messages. RNSAP shall be notified if the signalling connection breaks.
2. Connectionless data transfer service. RNSAP shall be notified in case a RNSAP message did not reach the intended peer RNSAP entity.

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## 7 Functions of RNSAP

The RNSAP protocol provides the following functions:

- Radio Link Management. This function allows the SRNC to manage radio links using dedicated resources in a DRNS;
- Physical Channel Reconfiguration. This function allows the DRNC to reallocate the physical channel resources for a Radio Link;
- Radio Link Supervision. This function allows the DRNC to report failures and restorations of a Radio Link;
- Compressed Mode Control [FDD]. This function allows the SRNC to control the usage of compressed mode within a DRNS;



- Measurements on Dedicated Resources. This function allows the SRNC to initiate measurements on dedicated resources in the DRNS. The function also allows the DRNC to report the result of the measurements;
- DL Power Drifting Correction [FDD]. This function allows the SRNC to adjust the DL power level of one or more Radio Links in order to avoid DL power drifting between the Radio Links;
- DCH Rate Control. This function allows the DRNC to limit the rate of each DCH configured for the Radio Link(s) of a UE in order to avoid congestion situations in a cell;
- CCCH Signalling Transfer. This function allows the SRNC and DRNC to pass information between the UE and the SRNC on a CCCH controlled by the DRNS;
- GERAN Signalling Transfer. This function allows the SBSS and DBSS, the SRNC and DBSS or the SBSS and DRNC to pass information between the UE/MS and the SRNC/SBSS on an SRB2/CCCH controlled by the DBSS/DRNC;
- Paging. This function allows the SRNC/SBSS to page a UE in a URA/GRA or a cell in the DRNS;
- Common Transport Channel Resources Management. This function allows the SRNC to utilise Common Transport Channel Resources within the DRNS (excluding DSCH resources for FDD);
- Relocation Execution. This function allows the SRNC/SBSS to finalise a Relocation previously prepared via other interfaces;
- Reporting of General Error Situations. This function allows reporting of general error situations, for which function specific error messages have not been defined.
- DL Power Timeslot Correction [TDD]. This function enables the DRNS to apply an individual offset to the transmission power in each timeslot according to the downlink interference level at the UE.
- Measurements on Common Resources. This function allows an RNC/BSS to request from another RNC/BSS to initiate measurements on Common Resources. The function also allows the requested RNC/BSS to report the result of the measurements.
- Information Exchange. This function allows an RNC to request from another RNC the transfer of information. The function also allows the requested RNC to report the requested information.
- Resetting the Iur. This function is used to completely or partly reset the Iur interface.
- UE Measurement Forwarding[TDD]. This function allows the DRNC to request and receive UE measurements from the SRNC.
- Tracing. This function allows the SRNC to activate or deactivate trace in a DRNC.

The mapping between the above functions and RNSAP elementary procedures is shown in the Table 1.

**Table 1: Mapping between functions and RNSAP elementary procedures**

<b>Function</b>	<b>Elementary Procedure(s)</b>
Radio Link Management	a) Radio Link Setup b) Radio Link Addition c) Radio Link Deletion d) Unsynchronised Radio Link Reconfiguration e) Synchronised Radio Link Reconfiguration Preparation f) Synchronised Radio Link Reconfiguration Commit g) Synchronised Radio Link Reconfiguration Cancellation h) Radio Link Pre-emption i) Radio Link Activation j) Radio Link Parameter Update
Physical Channel Reconfiguration	Physical Channel Reconfiguration
Radio Link Supervision	a) Radio Link Failure b) Radio Link Restoration
Compressed Mode Control [FDD]	a) Radio Link Setup b) Radio Link Addition c) Compressed Mode Command d) Unsynchronised Radio Link Reconfiguration e) Synchronised Radio Link Reconfiguration Preparation f) Synchronised Radio Link Reconfiguration Commit g) Synchronised Radio Link Reconfiguration Cancellation
Measurements on Dedicated Resources	a) Dedicated Measurement Initiation b) Dedicated Measurement Reporting c) Dedicated Measurement Termination d) Dedicated Measurement Failure
DL Power Drifting Correction [FDD]	Downlink Power Control
DCH Rate Control	a) Radio Link Setup b) Radio Link Addition c) Unsynchronised Radio Link Reconfiguration d) Synchronised Radio Link Reconfiguration Preparation e) Radio Link Congestion
CCCH Signalling Transfer	a) Uplink Signalling Transfer b) Downlink Signalling Transfer
GERAN Signalling Transfer	a) GERAN Uplink Signalling Transfer b) Downlink Signalling Transfer
Paging	Paging
Common Transport Channel Resources Management	a) Common Transport Channel Resources Initiation b) Common Transport Channel Resources Release
Relocation Execution	Relocation Commit
Reporting of General Error Situations	Error Indication
Measurements on Common Resources	a) Common Measurement Initiation b) Common Measurement Reporting c) Common Measurement Termination d) Common Measurement Failure
Information Exchange	a) Information Exchange Initiation b) Information Reporting c) Information Exchange Termination d) Information Exchange Failure
DL Power Timeslot Correction [TDD]	Downlink Power Timeslot Control
Reset	Reset
UE Measurement Forwarding[TDD]	a) UE Measurement Initiation b) UE Measurement Reporting c) UE Measurement Termination d) UE Measurement Failure
Trace	a) Iur Invoke Trace b) Iur Deactivate Trace

## 7.1 RNSAP functions and elementary procedures for Iur-g.

The functions and RNSAP elementary procedures, which are applicable on the Iur-g interface are shown in the Table 1A.

**Table 1A: RNSAP elementary procedures applicable on the Iur-g interface**

Function	Elementary Procedure(s)
GERAN Signalling Transfer	a) GERAN Uplink Signalling Transfer b) Downlink Signalling Transfer
Paging	Paging
Relocation Execution	Relocation Commit
Reporting of General Error Situations	Error Indication
Measurements on Common Resources	a) Common Measurement Initiation b) Common Measurement Reporting c) Common Measurement Termination d) Common Measurement Failure
Information Exchange	a) Information Exchange Initiation b) Information Reporting c) Information Exchange Termination d) Information Exchange Failure

Note: In the connection with the functions related to the GERAN and UTRAN, the term RNC shall refer to RNC/BSS.

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## 8 RNSAP Procedures

### 8.1 Elementary Procedures

In the following tables, all EPs are divided into Class 1 and Class 2 EPs.

Table 2: Class 1 Elementary Procedures

Elementary Procedure	Initiating Message	Successful Outcome	Unsuccessful Outcome
		Response message	Response message
Radio Link Setup	RADIO LINK SETUP REQUEST	RADIO LINK SETUP RESPONSE	RADIO LINK SETUP FAILURE
Radio Link Addition	RADIO LINK ADDITION REQUEST	RADIO LINK ADDITION RESPONSE	RADIO LINK ADDITION FAILURE
Radio Link Deletion	RADIO LINK DELETION REQUEST	RADIO LINK DELETION RESPONSE	
Synchronised Radio Link Reconfiguration Preparation	RADIO LINK RECONFIGURATION PREPARE	RADIO LINK RECONFIGURATION READY	RADIO LINK RECONFIGURATION FAILURE
Unsynchronised Radio Link Reconfiguration	RADIO LINK RECONFIGURATION REQUEST	RADIO LINK RECONFIGURATION RESPONSE	RADIO LINK RECONFIGURATION FAILURE
Physical Channel Reconfiguration	PHYSICAL CHANNEL RECONFIGURATION REQUEST	PHYSICAL CHANNEL RECONFIGURATION COMMAND	PHYSICAL CHANNEL RECONFIGURATION FAILURE
Dedicated Measurement Initiation	DEDICATED MEASUREMENT INITIATION REQUEST	DEDICATED MEASUREMENT INITIATION RESPONSE	DEDICATED MEASUREMENT INITIATION FAILURE
Common Transport Channel Resources Initialisation	COMMON TRANSPORT CHANNEL RESOURCES REQUEST	COMMON TRANSPORT CHANNEL RESOURCES RESPONSE	COMMON TRANSPORT CHANNEL RESOURCES FAILURE
Common Measurement Initiation	COMMON MEASUREMENT INITIATION REQUEST	COMMON MEASUREMENT INITIATION RESPONSE	COMMON MEASUREMENT INITIATION FAILURE
Information Exchange Initiation	INFORMATION EXCHANGE INITIATION REQUEST	INFORMATION EXCHANGE INITIATION RESPONSE	INFORMATION EXCHANGE INITIATION FAILURE
Reset	RESET REQUEST	RESET RESPONSE	
UE Measurement Initiation[TDD]	UE MEASUREMENT INITIATION REQUEST	UE MEASUREMENT INITIATION RESPONSE	UE MEASUREMENT INITIATION FAILURE

Table 3: Class 2 Elementary Procedures

Elementary Procedure	Initiating Message
Uplink Signalling Transfer	UPLINK SIGNALLING TRANSFER INDICATION
GERAN Uplink Signalling Transfer	GERAN UPLINK SIGNALLING TRANSFER INDICATION
Downlink Signalling Transfer	DOWNLINK SIGNALLING TRANSFER REQUEST
Relocation Commit	RELOCATION COMMIT
Paging	PAGING REQUEST
Synchronised Radio Link Reconfiguration Commit	RADIO LINK RECONFIGURATION COMMIT
Synchronised Radio Link Reconfiguration Cancellation	RADIO LINK RECONFIGURATION CANCEL
Radio Link Failure	RADIO LINK FAILURE INDICATION
Radio Link Restoration	RADIO LINK RESTORE INDICATION
Dedicated Measurement Reporting	DEDICATED MEASUREMENT REPORT
Dedicated Measurement Termination	DEDICATED MEASUREMENT TERMINATION REQUEST
Dedicated Measurement Failure	DEDICATED MEASUREMENT FAILURE INDICATION

Elementary Procedure	Initiating Message
Downlink Power Control [FDD]	DL POWER CONTROL REQUEST
Compressed Mode Command [FDD]	COMPRESSED MODE COMMAND
Common Transport Channel Resources Release	COMMON TRANSPORT CHANNEL RESOURCES RELEASE REQUEST
Error Indication	ERROR INDICATION
Downlink Power Timeslot Control [TDD]	DL POWER TIMESLOT CONTROL REQUEST
Radio Link Pre-emption	RADIO LINK PREEMPTION REQUIRED INDICATION
Radio Link Congestion	RADIO LINK CONGESTION INDICATION
Common Measurement Reporting	COMMON MEASUREMENT REPORT
Common Measurement Termination	COMMON MEASUREMENT TERMINATION REQUEST
Common Measurement Failure	COMMON MEASUREMENT FAILURE INDICATION
Information Reporting	INFORMATION REPORT
Information Exchange Termination	INFORMATION EXCHANGE TERMINATION REQUEST
Information Exchange Failure	INFORMATION EXCHANGE FAILURE INDICATION
Radio Link Parameter Update	RADIO LINK PARAMETER UPDATE INDICATION
UE Measurement Reporting [TDD]	UE MEASUREMENT REPORT
UE Measurement Termination [TDD]	UE MEASUREMENT TERMINATION REQUEST
UE Measurement Failure [TDD]	UE MEASUREMENT FAILURE INDICATION
Iur Invoke Trace	IUR INVOKE TRACE
Iur Deactivate Trace	IUR DEACTIVATE TRACE

## 8.2 Basic Mobility Procedures

### 8.2.1 Uplink Signalling Transfer

#### 8.2.1.1 General

The procedure is used by the DRNC to forward a Uu message received on the CCCH to the SRNC.

This procedure shall use the connectionless mode of the signalling bearer.

#### 8.2.1.2 Successful Operation

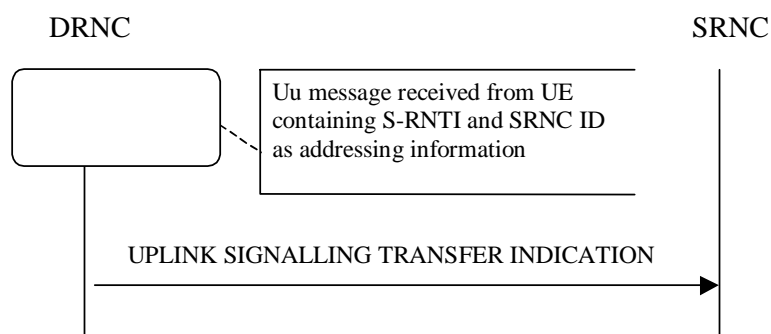


Figure 1: Uplink Signalling Transfer procedure, Successful Operation

When the DRNC receives an Uu message on the CCCH in which the UE addressing information is U-RNTI, i.e. S-RNTI and SRNC-ID, DRNC shall send the UPLINK SIGNALLING TRANSFER INDICATION message to the SRNC identified by the SRNC-ID received from the UE.

If at least one URA Identity is being broadcast in the cell where the Uu message was received (the accessed cell), the DRNC shall include a URA Identity for this cell in the *URA ID IE*, the *Multiple URAs Indicator IE* indicating whether or not multiple URA Identities are being broadcast in the accessed cell, and the RNC Identity of all other RNCs that are having at least one cell within the URA where the Uu message was received in the *URA Information IE* in the UPLINK SIGNALLING TRANSFER INDICATION message.

The DRNC shall include in the message the C-RNTI that it allocates to identify the UE in the radio interface in the accessed cell. If there is no valid C-RNTI for the UE in the accessed cell, the DRNS shall allocate a new C-RNTI for the UE. If the DRNS allocates a new C-RNTI it shall also release any C-RNTI previously allocated for the UE.

If the DRNS has any RACH, [FDD - CPCH], and/or FACH resources allocated for the UE identified by the U-RNTI in another cell than the accessed cell in which the Mac SDU sizes, flow control settings (including credits) and/or transport bearer are different from those in the old cell, then the DRNS shall not include the *Common Transport Channel Resources Initialisation Not Required IE* in the UPLINK SIGNALLING TRANSFER INDICATION message. In addition the DRNS shall release these RACH, [FDD - CPCH,] and/or FACH resources in old cell.

If the DRNS has any RACH, [FDD - CPCH], and/or FACH resources allocated for the UE identified by the U-RNTI in another cell than the accessed cell in which the Mac SDU sizes, flow control settings (including credits) and transport bearer are the same as in the old cell, there is no need for Common Transport Channel Resources Initialisation to be initiated. In that case, DRNC may include the *Common Transport Channel Resources Initialisation Not Required IE* in the UPLINK SIGNALLING TRANSFER INDICATION message. In addition, the DRNS shall move these RACH, [FDD - CPCH,] and/or FACH resources to the new cell. If no Common Transfer Channel Resources Initialisation procedure is executed, the currently applicable Mac SDU sizes, flow control settings (including credits) and transport bearer shall continue to be used while the UE is in the new cell.

If no context exists for this UE in the DRNC, the DRNC shall create a UE Context for this UE, allocate a D-RNTI for the UE Context, and include the *D-RNTI IE* and the identifiers for the CN CS Domain and CN PS Domain that the DRNC is connected to in the UPLINK SIGNALLING TRANSFER INDICATION message. These CN Domain Identifiers shall be based on the LAC and RAC respectively of the cell where the message was received from the UE.

Depending on local configuration in the DRNS, it may include the geographical co-ordinates of the cell, represented either by the *Cell GAI IE* or by the *Cell GA Additional Shapes IE*, in which the Uu message was received in the UPLINK SIGNALLING TRANSFER INDICATION message. If the DRNC includes the *Cell GA Additional Shapes IE* in the UPLINK SIGNALLING TRANSFER INDICATION message, it shall also include the *Cell GAI IE*.

[FDD - The DRNC shall include the *DPC Mode Change Support Indicator IE* in the UPLINK SIGNALLING TRANSFER INDICATION message if the accessed cell supports DPC mode change.]

[FDD - The DRNC shall include the *Flexible Hard Split Support Indicator IE* in the UPLINK SIGNALLING TRANSFER INDICATION message if the accessed cell supports TFCI flexible hard split mode.]

The DRNC shall include [FDD - the *Cell Capability Container FDD IE*] [3.84Mcps TDD - the *Cell Capability Container TDD IE*] [1.28Mcps TDD - the *Cell Capability Container TDD LCR IE*] in the UPLINK SIGNALLING TRANSFER INDICATION message if the accessed cell supports any functionalities listed in [FDD - 9.2.2.D] [3.84Mcps TDD - 9.2.3.1a] [1.28Mcps TDD - 9.2.3.1b].

If available, the DRNC shall include the *SNA Information IE* for the concerned cell.

When receiving the *SNA Information IE*, the SRNC should use it to restrict cell access based on SNA information. See also [40] for a broader description of the SNA access control.

[FDD - The DRNC shall include the *Cell Portion ID IE* in the UPLINK SIGNALLING TRANSFER INDICATION message if available.]

### 8.2.1.3 Abnormal Conditions

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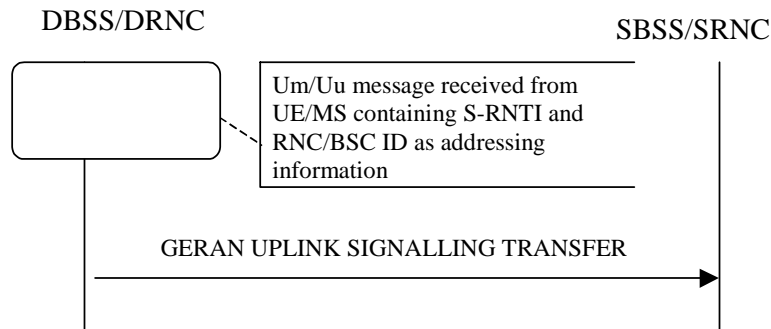
## 8.2.1A GERAN Uplink Signalling Transfer

### 8.2.1A.1 General

The procedure is used by the DBSS to forward an Um message received on the SRB2 to the SBSS/SRNC. The procedure is also used by the DRNC to forward a Uu message received on the CCCH to the SBSS.

This procedure shall use the connectionless mode of the signalling bearer.

### 8.2.1A.2 Successful Operation



**Figure 1A: GERAN Uplink Signalling Transfer procedure, Successful Operation**

When the DBSS receives an Um message on the SRB2 in which the MS addressing information is G-RNTI, i.e. S-RNTI and BSC-ID, DBSS shall send the GERAN UPLINK SIGNALLING TRANSFER INDICATION message to the SBSS/SRNC identified by the BSC-ID received from the MS.

Alternatively, when the DRNC receives an Uu message on the CCCH in which the UE addressing information is U-RNTI, i.e. S-RNTI and SRNC-ID, and in which the SRNC-ID points to a GERAN BSS, the DRNC shall send the GERAN UPLINK SIGNALLING TRANSFER INDICATION message to the SBSS identified by SRNC-ID received from the UE.

If at least one GRA/URA Identity is being broadcast in the cell where the Um/Uu message was received (the accessed cell), the DBSS/DRNC shall include a GRA/URA Identity for this cell in the *URA ID IE*, the *Multiple URAs Indicator IE* indicating whether or not multiple GRA/URA Identities are being broadcast in the accessed cell, and the RNC/BSS Identity of all other RNC/BSSs that are having at least one cell within the GRA/URA where the Um/Uu message was received in the *URA Information IE* in the GERAN UPLINK SIGNALLING TRANSFER INDICATION message.

If no context exists for this UE/MS in the DBSS/DRNC, the DBSS/DRNC shall create a UE Context for this UE/MS, allocate a D-RNTI for the UE Context, and include the *D-RNTI IE* and the identifiers for the CN CS Domain and CN PS Domain that the DBSS/DRNC is connected to in the GERAN UPLINK SIGNALLING TRANSFER INDICATION message. These CN Domain Identifiers shall be based on the LAC and RAC respectively of the cell where the message was received from the UE/MS.

### 8.2.1A.3 Abnormal Conditions

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## 8.2.2 Downlink Signalling Transfer

### 8.2.2.1 General

The procedure is used by the SRNC to request to the DRNC the transfer of a Uu message on the CCCH in a cell. When used, the procedure is in response to a received Uplink Signalling Transfer procedure.

This procedure shall use the connectionless mode of the signalling bearer.

### 8.2.2.1.1 Downlink Signalling Transfer for lur-g

The procedure is used by the SRNC/SBSS to request to the DBSS the transfer of an Um message on the SRB2 in a cell.

The procedure is used by the SBSS to request to the DRNC the transfer of a Uu message on the CCCH in a cell.

### 8.2.2.2 Successful Operation



**Figure 2: Downlink Signalling Transfer procedure, Successful Operation**

The procedure consists of the DOWNLINK SIGNALLING TRANSFER REQUEST message sent by the SRNC to the DRNC.

The message contains the Cell Identifier (*C-ID*) contained in the received UPLINK SIGNALLING TRANSFER INDICATION message and the *D-RNTI*.

Upon receipt of the message, the DRNC shall send the L3 Information on the CCCH in the cell indicated by the *C-ID* IE to the UE identified by the *D-RNTI* IE.

If the *D-RNTI Release Indication* IE is set to "Release *D-RNTI*" and the DRNS has no dedicated resources (DCH, [TDD - USCH,] and/or DSCH) allocated for the UE, the DRNS shall release the *D-RNTI*, the UE Context and any RACH, [FDD - CPCH,] and FACH resources and any *C-RNTI* allocated to the UE Context upon receipt of the DOWNLINK SIGNALLING TRANSFER REQUEST message.

If the *D-RNTI Release Indication* IE is set to "Release *D-RNTI*" and the DRNS has dedicated resources allocated for the UE, the DRNS shall only release any RACH, [FDD - CPCH,] and FACH resources and any *C-RNTI* allocated to the UE Context upon receipt of the DOWNLINK SIGNALLING TRANSFER REQUEST message.

#### 8.2.2.2.1 Successful Operation for lur-g

The procedure consists of the DOWNLINK SIGNALLING TRANSFER REQUEST message sent by the SRNC/SBSS to the DBSS or by the SBSS to the DRNC.

The message contains the Cell Identifier (*C-ID*) contained in the received UPLINK SIGNALLING TRANSFER INDICATION message and the *D-RNTI*.

Upon receipt of the message, the DBSS shall send the L3 Information on the SRB2 in the cell indicated by the *C-ID* IE to the UE/MS identified by the *D-RNTI* IE.

Upon receipt of the message, the DRNC shall send the L3 Information on the CCCH in the cell indicated by the *C-ID* IE to the UE/MS identified by the *D-RNTI* IE.

### 8.2.2.3 Abnormal Conditions

If the user identified by the *D-RNTI* IE has already accessed another cell controlled by the DRNC than the cell identified by the *C-ID* IE in the DOWNLINK SIGNALLING TRANSFER REQUEST message, the message shall be ignored.

#### 8.2.2.3.1 Abnormal Conditions for lur-g

If the user identified by the *D-RNTI* IE has already accessed another cell controlled by the DRNC/DBSS than the cell identified by the *C-ID* IE in the DOWNLINK SIGNALLING TRANSFER REQUEST message, the message shall be ignored.



If the DRNC receives from the SBSS the DOWNLINK SIGNALLING TRANSFER REQUEST message, in which the *D-RNTI Release Indication* IE is set to "not Release D-RNTI", the DRNC shall ignore this IE and release the D-RNTI.

If the DBSS receives from the SBSS/SRNC the DOWNLINK SIGNALLING TRANSFER REQUEST message, in which the *D-RNTI Release Indication* IE is set to "not Release D-RNTI", the DBSS shall ignore this IE and release the D-RNTI.

## 8.2.3 Relocation Commit

### 8.2.3.1 General

The Relocation Commit procedure is used by source RNC to execute the Relocation. This procedure supports the Relocation procedures described in [2].

This procedure shall use the signalling bearer mode specified below.

### 8.2.3.2 Successful Operation



**Figure 3: Relocation Commit procedure, Successful Operation**

The source RNC sends the RELOCATION COMMIT message to the target RNC to request the target RNC to proceed with the Relocation. When the UE is utilising one or more radio links in the DRNC the message shall be sent using the connection oriented service of the signalling bearer and no further identification of the UE Context in the DRNC is required. If on the other hand, the UE is not utilising any radio link the message shall be sent using the connectionless service of the signalling bearer and the *D-RNTI* IE shall be included in the message to identify the UE Context in the DRNC.

Upon receipt of the RELOCATION COMMIT message from the source RNC the target RNC finalises the Relocation. If the message contains the transparent *RANAP Relocation Information* IE the target RNC shall use this information when finalising the Relocation.

#### 8.2.3.2.1 Successful Operation for lur-g

The source RNC/BSS sends the RELOCATION COMMIT message to the target RNC/BSS to request the target RNC/BSS to proceed with the Relocation.

The message shall be sent using the connectionless service of the signalling bearer and the *D-RNTI* IE shall be included in the message to identify the UE/MS context in the DBSS.

Upon receipt of the RELOCATION COMMIT message from the source RNC/BSS, the target RNC/BSS finalises the Relocation. If the message contains the transparent *RANAP Relocation Information* IE the target RNC/BSS shall use this information when finalising the Relocation.

### 8.2.3.3 Abnormal Conditions

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## 8.2.4 Paging

### 8.2.4.1 General

This procedure is used by the SRNC to indicate to a CRNC that a UE shall be paged in a cell or URA that is under the control of the CRNC.

This procedure shall use the connectionless mode of the signalling bearer.

### 8.2.4.2 Successful Operation



**Figure 4: Paging procedure, Successful Operation**

The procedure is initiated with a PAGING REQUEST message sent from the SRNC to the CRNC.

If the message contains the *C-ID* IE, the CRNC shall page in the indicated cell. Alternatively, if the message contains the *URA-ID* IE, the CRNC shall page in all cells that it controls in the indicated URA.

If the PAGING REQUEST message includes the *CN Originated Page to Connected Mode UE* IE, the CRNC shall include the information contained in the *CN Originated Page to Connected Mode UE* IE when paging the UE.

The CRNC shall calculate the Paging Occasions from the *IMSI* IE and the *DRX Cycle Length Coefficient* IE according to specification in ref. [15] and apply transmission on PICH and PCH accordingly.

#### 8.2.4.2.1 Successful Operation for lur-g

The procedure is initiated with a PAGING REQUEST message sent from the SBSS to the CRNC/CBSS or from the SRNC to the CBSS.

If the message contains the *URA-ID* IE, the CRNC/CBSS shall page in all cells that it controls in the indicated URA/GRA.

If the PAGING REQUEST message includes the *CN Originated Page to Connected Mode UE* IE, the CRNC/CBSS shall include the information contained in the *CN Originated Page to Connected Mode UE* IE when paging the UE.

The CBSS shall calculate the Paging Occasions from the *IMSI* IE and the *GERAN DRX Cycle Length Coefficient* IE according to specification in ref. [36] and apply transmission on PCCCH or PACCH accordingly.

### 8.2.4.3 Abnormal Conditions

#### 8.2.4.3.1 Abnormal Conditions for lur-g

If the DRNC receives a PAGING REQUEST message from the SBSS, which contains the *C-ID* IE, the message shall be ignored.

If the DBSS receives a PAGING REQUEST message from the SBSS/SRNC, which contains the *C-ID* IE, the message shall be ignored.

## 8.3 DedicatedCH Procedures

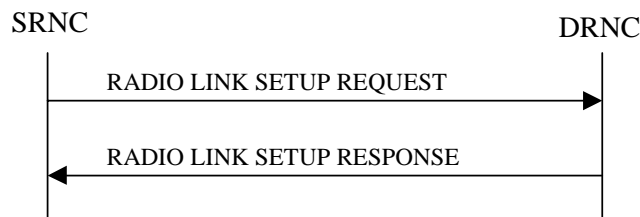
### 8.3.1 Radio Link Setup

#### 8.3.1.1 General

This procedure is used for establishing the necessary resources in the DRNS for one or more radio links.

The connection-oriented service of the signalling bearer shall be established in conjunction with this procedure.

#### 8.3.1.2 Successful Operation



**Figure 5: Radio Link Setup procedure: Successful Operation**

When the SRNC makes an algorithmic decision to add the first cell or set of cells from a DRNS to the active set of a specific UE-UTRAN connection, the RADIO LINK SETUP REQUEST message is sent to the corresponding DRNC to request establishment of the radio link(s). The Radio Link Setup procedure is initiated with this RADIO LINK SETUP REQUEST message sent from the SRNC to the DRNC.

Upon receipt of the RADIO LINK SETUP REQUEST message, the DRNS shall reserve the necessary resources and configure the new RL(s) according to the parameters given in the message. Unless specified below, the meaning of parameters is specified in other specifications.

The DRNS shall prioritise resource allocation for the RL(s) to be established according to Annex A.

If the RADIO LINK SETUP REQUEST message includes the *Allowed Queuing Time* IE the DRNS may queue the request for a time period not to exceed the value of the *Allowed Queuing Time* IE before starting to execute the request.

#### Transport Channels Handling:

##### DCH(s):

[TDD - If the *DCH Information* IE is present in the RADIO LINK SETUP REQUEST message, the DRNS shall configure the new DCHs according to the parameters given in the message.]

If the RADIO LINK SETUP REQUEST message includes a *DCH Information* IE with multiple *DCH Specific Info* IEs, then the DRNS shall treat the DCHs in the *DCH Information* IE as a set of co-ordinated DCHs.

If the *DCH Specific Info* IE includes the *Unidirectional DCH Indicator* IE set to "Uplink DCH only", the DRNS shall ignore the *Transport Format Set* IE for the downlink for this DCH. As a consequence this DCH is not included as a part of the downlink CCTrCH.

[TDD - If the *DCH Specific Info* IE includes the *Unidirectional DCH Indicator* IE set to "Downlink DCH only", the DRNS shall ignore the *Transport Format Set* IE for the uplink for this DCH. As a consequence this DCH is not included as a part of the uplink CCTrCH.]

[FDD - For each DCH which do not belong to a set of co-ordinated DCHs, and which includes a *QE-Selector* IE set to "selected", the DRNS shall use the Transport channel BER from that DCH for the QE in the UL data frames. If no Transport channel BER is available for the selected DCH, the DRNS shall use the Physical channel BER for the QE, ref. [4]. If the *QE-Selector* IE is set to "non-selected", the DRNS shall use the Physical channel BER for the QE in the UL data frames, ref. [4].]

For a set of co-ordinated DCHs, the DRNS shall use the Transport channel BER from the DCH with the *QE-Selector* IE set to "selected" for the QE in the UL data frames, ref. [4]. [FDD - If no Transport channel BER is available for the selected DCH, the DRNS shall use the Physical channel BER for the QE, ref. [4]. If all DCHs have *QE-Selector* IE set to "non-selected", the DRNS shall use the Physical channel BER for the QE, ref. [4].] [TDD - If no Transport channel BER is available for the selected DCH, the DRNS shall use 0 for the QE, ref. [4].]

The DRNS shall use the included *UL DCH FP Mode* IE for a DCH or a set of co-ordinated DCHs as the DCH FP Mode in the Uplink of the user plane for the DCH or the set of co-ordinated DCHs.

The DRNS shall use the included *ToAWS* IE for a DCH or a set of co-ordinated DCHs as the Time of Arrival Window Startpoint in the user plane for the DCH or the set of co-ordinated DCHs.

The DRNS shall use the included *ToAWE* IE for a DCH or a set of co-ordinated DCHs as the Time of Arrival Window Endpoint in the user plane for the DCH or the set of co-ordinated DCHs.

The *Frame Handling Priority* IE defines the priority level that should be used by the DRNS to prioritise between different frames of the data frames of the DCHs in the downlink on the radio interface in congestion situations once the new RL(s) have been activated.

The *Traffic Class* IE may be used to determine the transport bearer characteristics to apply between DRNC and Node B for the related DCH or set of co-ordinated DCHs. The DRNC should ignore the *Traffic Class* IE if the *TrCH Source Statistics Descriptor* IE indicates the value "RRC".

If the *TNL QoS* IE is included for a DCH or a set of co-ordinated DCHs and if ALCAP is not used, the *TNL QoS* IE may be used by the DRNS to determine the transport bearer characteristics to apply in the uplink for the related DCH or set of co-ordinated DCHs.

If the *DCH Information* IE contains a *DCH Specific Info* IE which includes the *Guaranteed Rate Information* IE, the DRNS shall treat the included IEs according to the following:

- If the *Guaranteed Rate Information* IE includes the *Guaranteed UL Rate* IE, the DRNS shall apply the Guaranteed Rate in the uplink of this DCH. The DRNS may decide to request the SRNC to limit the user rate of the uplink of the DCH at any point in time. The DRNS may request the SRNC to reduce the user rate of the uplink of the DCH below the guaranteed bit rate, however, whenever possible the DRNS should request the SRNC to only reduce the user rate between the maximum bit rate and the guaranteed bit rate. If the *DCH Specific Info* IE in the *DCH Information* IE does not include the *Guaranteed UL Rate* IE, the DRNS shall not limit the user rate of the uplink of the DCH.
- If the *Guaranteed Rate Information* IE includes the *Guaranteed DL Rate* IE, the DRNS shall apply the Guaranteed Rate in the downlink of this DCH. The DRNS may decide to request the SRNC to limit the user rate of the downlink of the DCH at any point in time. The DRNS may request the SRNC to reduce the user rate of the downlink of the DCH below the guaranteed bit rate, however, whenever possible the DRNS should request the SRNC to only reduce the user rate between the maximum bit rate and the guaranteed bit rate. If the *DCH Specific Info* IE in the *DCH Information* IE does not include the *Guaranteed DL Rate* IE, the DRNS shall not limit the user rate of the downlink of the DCH.

#### **DSCH(s):**

If the *DSCH Information* IE is included in the RADIO LINK SETUP REQUEST message, the DRNC shall establish the requested DSCHs [FDD - on the RL indicated by the *PDSCH RL ID* IE]. If the *Transport Layer Address* IE and *Binding ID* IE are included in the *DSCH Information* IE the DRNC may use the transport layer address and the binding identifier received from the SRNC when establishing a transport bearer for the DSCH. In addition, the DRNC shall send a valid set of *DSCH Scheduling Priority* IE and *MAC-c/sh SDU Length* IE parameters to the SRNC in the RADIO LINK SETUP RESPONSE message. If the *PDSCH RL ID* IE indicates a radio link in the DRNS, then the DRNC shall allocate a DSCH-RNTI to the UE Context and include the *DSCH-RNTI* IE in the RADIO LINK SETUP RESPONSE message.

If the *DSCH Information* IE is included in the RADIO LINK SETUP REQUEST message, the DRNS may use the *Traffic Class* IE to determine the transport bearer characteristics to apply between DRNC and Node B for the related DSCHs.

The DRNC shall include the *DSCH Initial Window Size* IE in the RADIO LINK SETUP RESPONSE message for each DSCH, if the DRNS allows the SRNC to start transmission of MAC-c/sh SDUs before the DRNS has allocated capacity on user plane as described in [32].

**[TDD - USCH(s)]:**

[TDD - The DRNS shall use the list of RB Identities in the *RB Info* IE in the *USCH information* IE to map each *RB Identity* IE to the corresponding USCH. If the *Transport Layer Address* IE and *Binding ID* IE are included in the *USCH Information* IE the DRNC may use the transport layer address and the binding identifier received from the SRNC when establishing a transport bearer for the USCH.]

[TDD - If the *USCH Information* IE is included in the RADIO LINK SETUP REQUEST message, the DRNS may use the *Traffic Class* IE to determine the transport bearer characteristics to apply between DRNC and Node B for the related USCHs.]

[TDD - If the *USCH Information* IE is included in the RADIO LINK SETUP REQUEST message and contains the *TNL QoS* IE, and if ALCAP is not used, the DRNS may use the *TNL QoS* IE to determine the transport bearer characteristics to apply in the uplink for the related USCH.]

[TDD - If the *USCH Information* IE is included in the RADIO LINK SETUP REQUEST message, the DRNS shall establish the requested USCHs, and the DRNC shall provide the [3.84 Mcps TDD - *USCH Information Response* IE] [1.28 Mcps TDD - *USCH Information Response LCR* IE] in the RADIO LINK SETUP RESPONSE message.]

**[TDD - CCTrCH Handling]:**

[TDD - If the *UL CCTrCH Information* IE is present in the RADIO LINK SETUP REQUEST message, the DRNS shall configure the new UL CCTrCH(s) according to the parameters given in the message.]

[1.28Mcps TDD - If the *UL CCTrCH Information LCR* IE includes the *TDD TPC Uplink Step Size* IE, the DRNS shall configure the uplink TPC step size according to the parameters given in the message.]

[TDD - If the *DL CCTrCH Information* IE is present in the RADIO LINK SETUP REQUEST message, the DRNS shall configure the new DL CCTrCH(s) according to the parameters given in the message.]

[TDD - If the *TPC CCTrCH List* IE is present in the RADIO LINK SETUP REQUEST message, the DRNS shall configure the identified UL CCTrCHs with TPC according to the parameters given in the message.]

**HS-DSCH:**

If the *HS-DSCH Information* IE is present in the RADIO LINK SETUP REQUEST message, then:

- The DRNS shall setup the requested HS-PDSCH resources on the Serving HS-DSCH Radio Link indicated by the *HS-PDSCH RL ID* IE.
- The DRNC shall include the *HARQ Memory Partitioning* IE in the [FDD – *HS-DSCH FDD Information Response* IE] [TDD – *HS-DSCH TDD Information Response* IE] in the RADIO LINK SETUP RESPONSE message.
- The DRNC shall allocate an HS-DSCH-RNTI to the UE Context and include the *HS-DSCH-RNTI* IE in the RADIO LINK SETUP RESPONSE message.
- The DRNC shall include in the RADIO LINK SETUP RESPONSE message the *Binding ID* IE and *Transport Layer Address* IE for establishment of transport bearer for every HS-DSCH MAC-d flow being established.
- If the RADIO LINK SETUP REQUEST message includes the *Transport Layer Address* IE and *Binding ID* IE in the *HS-DSCH Information* IE for an HS-DSCH MAC-d flow, then the DRNC may use the transport layer address and the binding identifier received from the SRNC when establishing a transport bearer for the concerned HS-DSCH MAC-d flow.
- The DRNS may use the *Traffic Class* IE for a specific HS-DSCH MAC-d flow to determine the transport bearer characteristics to apply between DRNC and Node B.
- If the RADIO LINK SETUP REQUEST message includes the *MAC-hs Guaranteed Bit Rate* IE for a Priority Queue in the *HS-DSCH MAC-d Flows Information* IE in the *HS-DSCH Information* IE, then

the DRNS shall use this information to optimise MAC-hs scheduling decisions for the related HSDPA Priority Queue.

- If the RADIO LINK SETUP REQUEST message includes the *Discard Timer* IE for a Priority Queue in the *HS-DSCH MAC-d Flows Information* IE in the *HS-DSCH Information* IE, then the DRNS shall use this information to discard out-of-date MAC-hs SDUs from the related HSDPA Priority Queue.
- The DRNC shall include the *HS-DSCH Initial Capacity Allocation* IE in the [FDD – *HS-DSCH FDD Information Response* IE] [TDD – *HS-DSCH TDD Information Response* IE] in the RADIO LINK SETUP RESPONSE message for every HS-DSCH MAC-d flow being established, if the DRNS allows the SRNC to start transmission of MAC-d PDUs before the DRNS has allocated capacity on user plane as described in [32].
- [FDD - If the RADIO LINK SETUP REQUEST message includes the *HS-SCCH Power Offset* IE in the *HS-DSCH Information* IE, then the DRNS may use this value to determine the HS-SCCH power. The HS-SCCH Power Offset should be applied for any HS-SCCH transmission to this UE.]
- [FDD - The DRNC shall include the *Measurement Power Offset* IE in the *HS-DSCH Information Response* IE in the RADIO LINK SETUP RESPONSE message.]
- [FDD - The DRNS shall allocate HS-SCCH codes corresponding to the HS-DSCH and the DRNC shall include the *HS-SCCH Specific Information Response* IE in the *HS-DSCH FDD Information Response* IE in the RADIO LINK SETUP RESPONSE message.]
- [TDD - The DRNS shall allocate HS-SCCH parameters corresponding to the HS-DSCH and the DRNC shall include the [3.84Mcps TDD - *HS-SCCH Specific Information Response* IE] [1.28Mcps TDD - *HS-SCCH Specific Information Response LCR* IE] in the *HS-DSCH TDD Information Response* IE in the RADIO LINK SETUP RESPONSE message.]
- [TDD - The DRNC shall include the [3.84 Mcps TDD - *HS-PDSCH Timeslot Specific Information* IE] [1.28 Mcps TDD - *HS-PDSCH Timeslot Specific Information LCR* IE] in the *HS-DSCH Information Response* IE in the RADIO LINK SETUP RESPONSE message.]
- [FDD - The DRNC shall include the *HS-PDSCH And HS-SCCH Scrambling Code* IE in the *HS-DSCH FDD Information Response* IE in the RADIO LINK SETUP RESPONSE message.]

#### **FDD - E-DCH:**

If the *E-DCH FDD Information* IE is present in the RADIO LINK SETUP REQUEST message and the *RL Information* IE contains the *RL specific E-DCH Information* IE for one Radio Link then:

- The DRNS shall setup the requested E-DCH resources on the Radio Link indicated by the *RL ID* IE in the *RL Information* IE.
- The RADIO LINK SETUP REQUEST message shall contain in the *RL Information* IE for every RL the *E-DCH RL Indication* IE indicates whether this RL has configured E-DCH resources.
- If the RADIO LINK SETUP REQUEST message includes the *Transport Layer Address* IE and *Binding ID* IE in the *RL specific E-DCH Information* IE for an E-DCH MAC-d flow, then the DRNC may use the transport layer address and the binding identifier received from the SRNC when establishing a transport bearer for the concerned E-DCH MAC-d flow.
- The DRNS may use the *Traffic Class* IE for a specific E-DCH MAC-d flow to determine the transport bearer characteristics to apply between DRNC and Node B.
- If the RADIO LINK SETUP REQUEST message includes the *MAC-e Guaranteed Bit Rate* IE for a E-DCH MAC-d flow in the *E-DCH MAC-d Flow Specific Information* IE in the *E-DCH FDD Information* IE, then the DRNS shall use this information to optimise MAC-e scheduling decisions.
- If the RADIO LINK SETUP REQUEST message includes the *Maximum Number of Retransmissions for E-DCH* IE for a E-DCH MAC-d flow in the *E-DCH MAC-d Flow Specific Information* IE in the *E-DCH FDD Information* IE, then the DRNS shall use this information to report if the maximum number of retransmissions has elapsed.

- If the *TNL QoS IE* is included for a E-DCH MAC-d flow and if ALCAP is not used, the *TNL QoS IE* may be used by the DRNS to determine the transport bearer characteristics to apply in the uplink for the related MAC-d flow.
- The DRNC shall include the *E-AGCH and E-RGCH and E-HICH FDD Scrambling Code IE* and the *E-RGCH and E-HICH Channelisation Code IE* and the corresponding *Sequence Number for E-RGCH IE* and the *Sequence Number for E-HICH IE* in the *E-DCH FDD DL Control Channel Information IE* in the RADIO LINK SETUP RESPONSE message.
- If the RADIO LINK SETUP REQUEST message contains the *Serving E-DCH RL ID IE* then the DRNC shall allocate an E-RNTI and include this E-RNTI and the Channelisation Code of the corresponding E-AGCH in the *E-DCH FDD DL Control Channel Information IE* in the *RL Information IE* for the indicated RL in the RADIO LINK SETUP RESPONSE message]

### Physical Channels Handling:

#### [FDD - Compressed Mode]:

[FDD - If the RADIO LINK SETUP REQUEST message includes the *Transmission Gap Pattern Sequence Information IE*, the DRNS shall store the information about the Transmission Gap Pattern Sequences to be used in the Compressed Mode Configuration. This Compressed Mode Configuration shall be valid in the DRNS until the next Compressed Mode Configuration is configured in the DRNS or the last Radio Link is deleted.]

[FDD - If the RADIO LINK SETUP REQUEST message includes the *Transmission Gap Pattern Sequence Information IE* and the *Active Pattern Sequence Information IE*, the DRNS shall use the information to activate the indicated Transmission Gap Pattern Sequence(s) in the new RL. The received *CM Configuration Change CFN IE* refers to latest passed CFN with that value. The DRNS shall treat the received *TGCFN IEs* as follows:]

- [FDD - If any received *TGCFN IE* has the same value as the received *CM Configuration Change CFN IE*, the DRNS shall consider the concerned Transmission Gap Pattern Sequence as activated at that CFN.]
- [FDD - If any received *TGCFN IE* does not have the same value as the received *CM Configuration Change CFN IE* but the first CFN after the CM Configuration Change CFN with a value equal to the *TGCFN IE* has already passed, the DRNS shall consider the concerned Transmission Gap Pattern Sequence as activated at that CFN.]
- [FDD - For all other Transmission Gap Pattern Sequences included in the *Active Pattern Sequence Information IE*, the DRNS shall activate each Transmission Gap Pattern Sequence at the first CFN after the CM Configuration Change CFN with a value equal to the *TGCFN IE* for the Transmission Gap Pattern Sequence.]

[FDD - If the *Downlink Compressed Mode Method IE* in one or more Transmission Gap Pattern Sequence is set to "SF/2" in the RADIO LINK SETUP REQUEST message, the DRNS shall include the *Transmission Gap Pattern Sequence Scrambling Code Information IE* in the RADIO LINK SETUP RESPONSE message indicating for each DL Channelisation Code whether the alternative scrambling code shall be used or not.]

#### [FDD - DL Code Information]:

[FDD - When more than one DL DPDCH are assigned per RL, the segmented physical channel shall be mapped on to DL DPDCHs according to [8]. When  $p$  number of DL DPDCHs are assigned to each RL, the first pair of DL Scrambling Code and FDD DL Channelisation Code Number corresponds to "*PhCH number 1*", the second to "*PhCH number 2*", and so on until the  $p$ th to "*PhCH number p*".]

#### [FDD – Phase Reference Handling]:

[FDD – If the RADIO LINK SETUP REQUEST message includes the *UE Support Of Dedicated Pilots For Channel Estimation IE*, the DRNC shall assume that dedicated pilots may be used for channel estimation for DCH or DSCH.]

[FDD – If the RADIO LINK SETUP REQUEST message includes the *UE Support Of Dedicated Pilots For Channel Estimation Of HS-DSCH IE*, the DRNC shall assume that dedicated pilots may be used for channel estimation for HS-DSCH.]

[FDD – If Primary CPICH is not to be used as a Phase Reference for this Radio Link, the DRNC shall include the *Primary CPICH Usage For Channel Estimation* IE set to the value "Primary CPICH shall not be used" in the RADIO LINK SETUP RESPONSE message.]

[FDD – If Secondary CPICH may be used as a Phase Reference for this Radio Link, the DRNC shall include the *Secondary CPICH Information* IE in the RADIO LINK SETUP RESPONSE message.]

**General:**

[FDD - If the *Propagation Delay* IE is included, the DRNS may use this information to speed up the detection of UL synchronisation on the Uu interface.]

[FDD - If the received *Limited Power Increase* IE is set to "Used", the DRNS shall, if supported, use Limited Power Increase according to ref. [10] subclause 5.2.1 for the inner loop DL power control.]

[FDD - If the RADIO LINK SETUP REQUEST message does not include the *Length of TFCI2* IE and the *Split type* IE is present with the value "Hard", then the DRNS shall assume the length of the TFCI (field 2) is 5 bits.]

[FDD - If the RADIO LINK SETUP REQUEST message includes *Split Type* IE, then the DRNS shall apply this information to the new configuration of TFCI.]

[FDD - If the RADIO LINK SETUP REQUEST message includes the *Length of TFCI2* IE, the DRNS shall apply this information to the length of TFCI(field 2).]

[TDD - If the RADIO LINK SETUP REQUEST message includes the *Maximum Number of DL Physical Channels per Timeslot* IE the DRNC shall take this value into account when allocating physical resources, otherwise the DRNC can assume that this UE capability is consistent with the other signalled UE capabilities.]

[1.28Mcps TDD - If the RADIO LINK SETUP REQUEST message includes the *Support for 8PSK* IE within the *DL Physical Channel Information* IE or *UL Physical Channel Information* IE, the DRNC shall take this into account in the specified direction when allocating physical resources, otherwise the DRNC can assume that this UE does not support 8PSK resource allocation.]

**FDD - E-DPCH Handling:**

If the *E-DPCH Information* IE is included, the *UL DPDCH Indicator for E-DCH operation* IE in the *UL DPCH Information* shall be present as well. If the *UL DPDCH Indicator for E-DCH operation* IE is set to "UL DPDCH not present" the *Min UL Channelisation Code Length* IE, the *Puncture Limit* IE and the *TFCS* IE, within the *UL DPCH Information* IE shall be ignored.

**Radio Link Handling:**

**Diversity Combination Control:**

[FDD - The *Diversity Control Field* IE indicates for each RL except for the first RL whether the DRNS shall combine the RL with any of the other RLs or not.

- If the *Diversity Control Field* IE is set to "May" (be combined with another RL), the DRNS shall decide for any of the alternatives.
- If the *Diversity Control Field* IE is set to "Must", the DRNS shall combine the RL with one of the other RL.
- If the *Diversity Control Field* IE is set to "Must not", the DRNS shall not combine the RL with any other existing RL.

When an RL is to be combined, the DRNS shall choose which RL(s) to combine it with.]

[FDD - The *Diversity Control Field* IE is only applicable for DCHs, in case of E-DCH it shall always be assumed to be set to "May".]



[FDD - In the RADIO LINK SETUP RESPONSE message, the DRNC shall indicate for each RL with the Diversity Indication in the *RL Information Response* IE whether the RL is combined or not.]

- [FDD - In case of not combining with a RL previously listed in the RADIO LINK SETUP RESPONSE message or for the first RL in the RADIO LINK SETUP RESPONSE message, the DRNC shall
  - in case of requested DCHs, include in the *DCH Information Response* IE in the RADIO LINK SETUP RESPONSE message the *Binding ID* IE and *Transport Layer Address* IE for the transport bearer to be established for each DCH of this RL.
  - in case of a requested E-DCH, include in the E-DCH FDD Information Response IE in the RADIO LINK SETUP RESPONSE message the *Binding ID* IE and the *Transport Layer Address* IE for the establishment of transport bearers for every E-DCH MAC-d flow being established.
- [FDD - Otherwise in case of combining, the *RL ID* IE indicates (one of) the RL(s) previously listed in this RADIO LINK SETUP RESPONSE message with which the concerned RL is combined.]

[TDD - The DRNC shall always include in the RADIO LINK SETUP RESPONSE message both the *Transport Layer Address* IE and the *Binding ID* IE for the transport bearer to be established for each DCH, DSCH and USCH of the RL.]

In the case of a set of co-ordinated DCHs requiring a new transport bearer the *Binding ID* IE and the *Transport Layer Address* IE shall be included in the RADIO LINK SETUP RESPONSE message for only one of the DCHs in the set of co-ordinated DCHs.

#### [FDD - Transmit Diversity]:

[FDD - If the cell in which the RL is being set up is capable to provide Close loop Tx diversity, the DRNC shall include the *Closed Loop Timing Adjustment Mode* IE in the RADIO LINK SETUP RESPONSE message indicating the configured Closed loop timing adjustment mode of the cell.]

[FDD - When the *Diversity Mode* IE is set to "STTD", "Closed loop mode1", or "Closed loop mode2", the DRNC shall activate/deactivate the Transmit Diversity for each Radio Link in accordance with the *Transmit Diversity Indicator* IE].

#### DL Power Control:

[FDD - If both the *Initial DL TX Power* IE and *Uplink SIR Target* IE are included in the message, the DRNS shall use the indicated DL TX Power and Uplink SIR Target as initial value. If the value of the *Initial DL TX Power* IE is outside the configured DL TX power range, the DRNS shall apply these constrains when setting the initial DL TX power. The DRNS shall also include the configured DL TX power range defined by *Maximum DL TX Power* IE and *Minimum DL TX Power* IE in the RADIO LINK SETUP RESPONSE message. The DRNS shall not transmit with a higher power than indicated by the *Maximum DL TX Power* IE or lower than indicated by the *Minimum DL TX Power* IE on any DL DPCH of the RL except during compressed mode, when the  $\delta P_{curr}$ , as described in ref.[10] subclause 5.2.1.3, shall be added to the maximum DL power for the associated compressed frame.]

[FDD - If both the *Initial DL TX Power* and the *Uplink SIR Target* IEs are not included in the RADIO LINK SETUP REQUEST message, then DRNC shall determine the initial Uplink SIR Target and include it in the *Uplink SIR Target* IE in the RADIO LINK SETUP RESPONSE message.]

[TDD - The DRNC shall use the *Uplink SIR Target CCTrCH* IEs in the RADIO LINK SETUP RESPONSE message to indicate for any UL CCTrCH an Uplink SIR Target value in case this is deviating from the value included in the *Uplink SIR Target* IE specified for the Radio Link. If in any [3.84Mcps TDD - *UL CCTrCH Information* IE] [1.28Mcps TDD - *UL CCTrCH Information LCR* IE] the *Uplink SIR Target CCTrCH* IE is not included, the value of the *Uplink SIR Target* IE shall apply to the respective UL CCTrCH.]

[FDD - If the *Primary CPICH Ec/No* IE is present, the DRNC should use the indicated value when deciding the Initial DL TX Power. If the *Enhanced Primary CPICH Ec/No* IE is present, the DRNC should use the indicated value when deciding the Initial DL Tx Power.]

[TDD - If [3.84Mcps TDD - the *DL Time Slot ISCP Info* IE] [1.28Mcps TDD - the *DL Time Slot ISCP Info LCR* IE] is present, the DRNS should use the indicated value when deciding the Initial DL TX Power for the Radio Link. The DRNS shall use the indicated DL Timeslot ISCP when determining the initial DL power per timeslot as specified in [22], i.e. it shall reduce the DL TX power in those downlink timeslots of the radio

link where the interference is low, and increase the DL TX power in those timeslots where the interference is high, while keeping the total downlink power in the radio link unchanged.]

[TDD - If the *Primary CCPCH RSCP Delta* IE is included, the DRNS should assume that the reported value for Primary CCPCH RSCP is in the negative range as per [24], and the value is equal to the *Primary CCPCH RSCP Delta* IE. If the *Primary CCPCH RSCP Delta* IE is not included and the *Primary CCPCH RSCP* IE is included, the DRNS should assume that the reported value is in the non-negative range as per [24], and the value is equal to the *Primary CCPCH RSCP* IE. The DRNS should use the indicated value when deciding the Initial DL TX Power for the Radio Link.]

[3.84 Mcps TDD - The DL TX power upper and lower limit is configured in the following way: The DRNC shall include the *Maximum DL TX Power* IE and *Minimum DL TX Power* IE in the RADIO LINK SETUP RESPONSE message. If the maximum or minimum power needs to be different for particular DCH type CCTrCHs, the DRNC shall include the value(s) for that CCTrCH in the *CCTrCH Maximum DL TX Power* IE and *CCTrCH Minimum DL TX Power* IE. The DRNS shall not transmit with a higher power than indicated by the appropriate *Maximum DL TX Power* IE/*CCTrCH Maximum DL TX Power* IE or lower than indicated by the appropriate *Minimum DL TX Power* IE/*CCTrCH Minimum DL TX Power* IE on any DL DPCH within each CCTrCH of the RL.]

[1.28 Mcps TDD - The DL TX power upper and lower limit is configured in the following way: The DRNC shall include the *Maximum DL TX Power* IE and *Minimum DL TX Power* IE in the RADIO LINK SETUP RESPONSE message. If the maximum or minimum power needs to be different for particular timeslots within a DCH type CCTrCH, the DRNC shall include the value(s) for that timeslot in the *Maximum DL TX Power* IE and *Minimum DL TX Power* IE within the *DL Timeslot Information LCR* IE. The DRNS shall not transmit with a higher power than indicated by the appropriate *Maximum DL TX Power* IE or lower than indicated by the appropriate *Minimum DL TX Power* IE on any DL DPCH within each timeslot of the RL.]

[1.28McpsTDD - If the *TSTD Support Indicator* IE is present, the DRNS shall apply this information when configuring the transmit diversity for the new radio link.]

[FDD - The DRNS shall start any DL transmission using the indicated DL TX power level (if received) or the decided DL TX power level on each DL channelisation code of a RL until UL synchronisation is achieved on the Uu interface for the concerned RLS or Power Balancing is activated. No inner loop power control or power balancing shall be performed during this period. The DL power shall then vary according to the inner loop power control (see ref.[10] subclause 5.2.1.2) and the power control procedure (see 8.3.15).]

[TDD - The DRNS shall start any DL transmission using the decided DL TX power level on each DL channelisation code and on each Time Slot of a RL until UL synchronisation is achieved on the Uu interface for the concerned RL. No inner loop power control shall be performed during this period. Then after UL synchronisation, the DL power shall vary according to the inner loop power control (see ref. [22] subclause 4.2.3.3).]

[FDD - If the received *Inner Loop DL PC Status* IE is set to "Active", the DRNS shall activate the inner loop DL power control for all RLS. If *Inner Loop DL PC Status* IE is set to "Inactive", the DRNS shall deactivate the inner loop DL power control for all RLS according to ref. [10].]

[FDD - If the *DPC Mode* IE is present in the RADIO LINK SETUP REQUEST message, the DRNC shall apply the DPC mode indicated in the message, and be prepared that the DPC mode may be changed during the lifetime of the RL. If the *DPC Mode* IE is not present in the RADIO LINK SETUP REQUEST message, DPC mode 0 shall be applied (see ref. [10]).]

[FDD - If the RADIO LINK SETUP REQUEST message includes the *DL Power Balancing Information* IE and the *Power Adjustment Type* IE is set to "Common" or "Individual", the DRNS shall activate the power balancing, if activation of power balancing by the RADIO LINK SETUP REQUEST message is supported, according to subclause 8.3.15, using the *DL Power Balancing Information* IE. If the DRNS starts the DL transmission and the activation of the power balancing at the same CFN, the initial power of the power balancing i.e.  $P_{init}$  shall be set to the power level indicated by the *Initial DL TX Power* IE (if received) or the decided DL TX power level on each DL channelisation code of a RL based on the *Primary CPICH Ec/No* IE or the *Enhanced Primary CPICH Ec/No* IE.]

[FDD - If activation of power balancing by the RADIO LINK SETUP REQUEST message is supported by the DRNS, the DRNC shall include the *DL Power Balancing Activation Indicator* IE in the *RL Information Response* IE in the RADIO LINK SETUP RESPONSE message.]

**Neighbouring Cell Handling:**

If there are UMTS neighbouring cell(s) to the cell in which a Radio Link was established then:

- The DRNC shall include in the RADIO LINK SETUP RESPONSE message the *Neighbouring FDD Cell Information IE* and/or *Neighbouring TDD Cell Information IE* in the *Neighbouring UMTS Cell Information IE* for each neighbouring FDD cell and/or TDD cell respectively. In addition, if the information is available, the DRNC shall include in the RADIO LINK SETUP RESPONSE message the *Frame Offset IE*, *Primary CPICH Power IE*, *Cell Individual Offset IE*, *STTD Support Indicator IE*, *Closed Loop Mode1 Support Indicator IE*, *Closed Loop Mode2 Support Indicator IE*, *Coverage Indicator IE*, *Antenna Co-location Indicator IE* and *HCS Prio IE* in the *Neighbouring FDD Cell Information IE*, and the *Frame Offset IE*, *Cell Individual Offset IE*, *DPCH Constant Value IE*, the *PCCPCH Power IE*, *Coverage Indicator IE*, *Antenna Co-location Indicator IE* and *HCS Prio IE* in the *Neighbouring TDD Cell Information IE* or the *Neighbouring TDD Cell Information LCR IE*. If the *Neighbouring TDD Cell Information IE* includes the *Sync Case IE* for the set to "Case1", the DRNC shall include the *Time Slot For SCH IE* in the *Neighbouring TDD Cell Information IE*. If the *Neighbouring TDD Cell Information IE* includes *Sync Case IE* set to "Case2", the DRNC shall include the *SCH Time Slot IE* in the *Neighbouring TDD Cell Information IE*.
- If a UMTS neighbouring cell is not controlled by the same DRNC, the DRNC shall also include in the RADIO LINK SETUP RESPONSE message the *CN PS Domain Identifier IE* and/or *CN CS Domain Identifier IE* which are the identifiers of the CN nodes connected to the RNC controlling the UMTS neighbouring cell.
- If the information is available, the DRNC shall include in the RADIO LINK SETUP RESPONSE message the *DPC Mode Change Support Indicator IE* for each neighbour cell in the *Neighbouring FDD Cell Information IE*
- [FDD - The DRNC shall include the *Flexible Hard Split Support Indicator IE* if the DRNC is aware that the neighbouring cell supports *Flexible Hard Split* mode.]
- The DRNC shall include the *Cell Capability Container FDD IE*, the *Cell Capability Container TDD IE* and/or the *Cell Capability Container TDD LCR IE* if the DRNC is aware that the neighbouring cell supports any functionality listed in 9.2.2.D, 9.2.3.1a and 9.2.3.1b.
- For the UMTS neighbouring cells which are controlled by the DRNC, the DRNC shall report in the RADIO LINK SETUP RESPONSE message the restriction state of those cells, otherwise the *Restriction StateIndicator IE* may be absent. The DRNC shall include in the RADIO LINK SETUP RESPONSE message the *Restriction StateIndicator IE* for the neighbouring cells which are controlled by the DRNC in the *Neighbouring FDD Cell Information IE*, the *Neighbouring TDD Cell Information IE* and the *Neighbouring TDD Cell Information LCR IE*.
- If available, the DRNC shall include the *SNA Information IE* for the concerned neighbouring cells in the *Neighbouring FDD Cell Information IE*, the *Neighbouring TDD Cell Information IE* and the *Neighbouring TDD Cell Information LCR IE*.

If there are GSM neighbouring cells to the cell(s) where a radio link is established, the DRNC shall include in the RADIO LINK SETUP RESPONSE message the *Neighbouring GSM Cell Information IE* for each of the GSM neighbouring cells. If available the DRNC shall include in the RADIO LINK SETUP RESPONSE message the *Cell Individual Offset IE*, and if the *Cell Individual Offset IE* alone cannot represent the value of the offset, the DRNC shall also include the *Extended GSM Cell Individual Offset IE* in the *Neighbouring GSM Cell Information IE*. If available the DRNC shall also include in the RADIO LINK SETUP RESPONSE message the *Coverage Indicator IE*, *Antenna Co-location Indicator IE* and *HCS Prio IE* in the *Neighbouring GSM Cell Information IE*. If available, the DRNC shall also include the *SNA Information IE* for the concerned neighbouring cells in the *Neighbouring GSM Cell Information IE*.

When receiving the *SNA Information IE* in the RADIO LINK SETUP RESPONSE message, the SRNC should use it to restrict cell access based on SNA information. See also [40] for a broader description of the SNA access control.

If there are GERAN neighbouring cells to the cell(s) where a radio link is established, the DRNC shall include the *GERAN Cell Capability IE* in the *Neighbouring GSM Cell Information IE* that is included in the RADIO LINK SETUP RESPONSE message for each of the GERAN cells.

If there are GERAN Iu-mode neighbouring cells to the cell(s) where a radio link is established, the DRNC shall include, if available, the *GERAN Classmark* IE in the *Neighbouring GSM Cell Information* IE that is included in the RADIO LINK SETUP RESPONSE message for each of the GERAN Iu-mode neighbouring cells. Ref. [39] defines when the transmission of the *GERAN Classmark* IE will be required at the initiation of the Relocation Preparation procedure.

**[1.28Mcps TDD - Uplink Synchronisation Parameters LCR]:**

[If the *Uplink Synchronisation Parameters LCR* IE is present, the DRNC shall use the indicated values of *Uplink synchronisation stepsize* IE and *Uplink synchronisation frequency* IE when evaluating the timing of the UL synchronisation.]

**[1.28Mcps TDD - Uplink Timing Advance Control LCR]:**

[1.28Mcps TDD - The DRNC shall include the *Uplink Timing Advance Control LCR* IE in the RADIO LINK SETUP RESPONSE message.]

**General:**

If the RADIO LINK SETUP REQUEST message includes the *RL Specific DCH Information* IE, the DRNC may use the transport layer address and the binding identifier received from the SRNC when establishing a transport bearer for the DCH or the set of co-ordinated DCHs.

[FDD - If the RADIO LINK SETUP REQUEST message includes the *SSDT Cell Identity* IE and the *S-Field Length* IE, the DRNS shall activate SSDT, if supported, using the *SSDT Cell Identity* IE, *S-Field Length* IE and *SSDT Cell Identity Length* IE.]

[FDD - If the RADIO LINK SETUP REQUEST message includes the *Qth Parameter* IE in addition to the *SSDT Cell Identity* IE, the DRNS shall use the *Qth Parameter* IE, if Qth signalling is supported, when SSDT is activated in the concerned new RL.]

[FDD - If the RADIO LINK SETUP REQUEST message includes the *SSDT Cell Identity for EDSCHPC* IE, the DRNS shall activate enhanced DSCH power control, if supported, using the *SSDT Cell Identity for EDSCHPC* IE and *SSDT Cell Identity Length* IE as well as *Enhanced DSCH PC* IE in accordance with ref. [10] subclause 5.2.2. If the RADIO LINK SETUP REQUEST message includes both *SSDT Cell Identity* IE and *SSDT Cell Identity for EDSCHPC* IE, then the DRNS shall ignore the *SSDT Cell Identity for EDSCHPC* IE. If the enhanced DSCH power control is activated and the *TFCI PC Support Indicator* IE is set to "TFCI PC Mode 2 Supported", the primary/secondary status determination in the enhanced DSCH power control shall be applied to the TFCI power control in DSCH hard split mode.]

[FDD - If the *DRAC Control* IE is set to "requested" in the RADIO LINK SETUP REQUEST message for at least one DCH and if the DRNS supports the DRAC, the DRNC shall include in the RADIO LINK SETUP RESPONSE message the *Secondary CCPCH Info* IE for the FACH in which the DRAC information is sent, for each Radio Link established in a cell where DRAC is active. If the DRNS does not support DRAC, the DRNC shall not provide these IEs in the RADIO LINK SETUP RESPONSE message.]

If no *D-RNTI* IE was included in the RADIO LINK SETUP REQUEST message, the DRNC shall include in the RADIO LINK SETUP RESPONSE message the *D-RNTI* IE, the *CN PS Domain Identifier* IE and/or the *CN CS Domain Identifier* IE for the CN domains (using LAC and RAC of the current cell) to which the DRNC is connected.

[FDD - If the *D-RNTI* IE was included in the RADIO LINK SETUP REQUEST message the DRNC shall include in the RADIO LINK SETUP RESPONSE message the *Primary Scrambling Code* IE, the *UL UARFCN* IE and the *DL UARFCN* IE.]

[TDD - If the *D-RNTI* IE was included in the RADIO LINK SETUP REQUEST message the DRNC shall include in the RADIO LINK SETUP RESPONSE message the *UARFCN* IE, the *Cell Parameter ID* IE and the *SCTD Indicator* IE.]

[3.84Mcps TDD - If the *D-RNTI* IE was included in the RADIO LINK SETUP REQUEST message the DRNC shall include in the RADIO LINK SETUP RESPONSE message the *Sync Case* IE and if the *Sync Case* IE is set to "Case 2", the DRNC shall also include the *SCH Time Slot* IE in the RADIO LINK SETUP RESPONSE message. If the included *Sync Case* IE is set to "Case1", the DRNC shall also include the *Time Slot For SCH* IE.]

[3.84Mcps TDD - The DRNC shall include the *Secondary CCPCH Info TDD* IE in the RADIO LINK SETUP RESPONSE message if at least one *DSCH Information Response* IE or *USCH Information Response* IE is included in the message and at least one DCH is configured for the radio link. The DRNC shall also include the *Secondary CCPCH Info TDD* IE in the RADIO LINK SETUP RESPONSE message if at least one *DSCH Information Response* IE or *USCH Information Response* IE is included in the message and the SHCCH messages for this radio link will be transmitted over a different secondary CCPCH than selected by the UE from system information.]

[1.28 Mcps TDD - The DRNC shall include the *Secondary CCPCH Info TDD LCR* IE in the RADIO LINK SETUP RESPONSE message if at least one *DSCH Information Response LCR* IE or *USCH Information Response LCR* IE is included in the message and at least one DCH is configured for the radio link. The DRNC shall also include the *Secondary CCPCH Info TDD LCR* IE in the RADIO LINK SETUP RESPONSE message if at least one *DSCH Information Response LCR* IE or *USCH Information Response LCR* IE is included in the message and the SHCCH messages for this radio link will be transmitted over a different secondary CCPCH than selected by the UE from system information.]

For each Radio Link established in a cell in which at least one URA Identity is being broadcast, the DRNC shall include in the *URA Information* IE within the RADIO LINK SETUP RESPONSE message URA Information for this cell including the *URA ID* IE, the *Multiple URAs Indicator* IE indicating whether or not multiple URA Identities are being broadcast in the cell, and the *RNC-ID* IEs of all other RNCs that have at least one cell within the URA identified by the *URA ID* IE.

Depending on local configuration in the DRNS, the DRNC may include in the RADIO LINK SETUP RESPONSE message the *UTRAN Access Point Position* IE and the geographical co-ordinates of the cell, represented either by the *Cell GAI* IE or by the *Cell GA Additional Shapes* IE. If the DRNC includes the *Cell GA Additional Shapes* IE in the RADIO LINK SETUP RESPONSE message, it shall also include the *Cell GAI* IE.

If the DRNS need to limit the user rate in the uplink of a DCH due to congestion caused by the UL UTRAN Dynamic Resources (see subclause 9.2.1.79) when starting to utilise a new Radio Link, the DRNC shall include in the RADIO LINK SETUP RESPONSE message the *Allowed UL Rate* IE in the *DCH Information Response* IE for this Radio Link.

If the DRNS need to limit the user rate in the downlink of a DCH due to congestion caused by the DL UTRAN Dynamic Resources (see subclause 9.2.1.79) when starting to utilise a new Radio Link, the DRNC shall include in the RADIO LINK SETUP RESPONSE message the *Allowed DL Rate* IE in the *DCH Information Response* IE for this Radio Link.

If the *Permanent NAS UE Identity* IE is included in the RADIO LINK SETUP REQUEST message, the DRNS shall store the information for the considered UE Context for the life-time of the UE Context.

If the RADIO LINK SETUP REQUEST message includes the *Permanent NAS UE Identity* IE and a *C-ID* IE corresponding to a cell reserved for operator use, the DRNS shall use this information to determine whether it can set up a Radio Link on this cell or not for the considered UE Context.

If the HCS priority information is available in the DRNS, it shall include the *HCS Prio* IE for each of the established RLs in the RADIO LINK SETUP RESPONSE message.

[FDD - If the accessed cell supports TFCI power control, the DRNC shall include the *TFCI PC Support Indicator* IE in the RADIO LINK SETUP RESPONSE message.]

The DRNS shall start receiving on the new RL(s) after the RLs are successfully established.

[FDD - If the RADIO LINK SETUP REQUEST message includes the *Cell Portion ID* IE, the DRNS shall use this information when it decides to use beamforming for the new RL.]

#### **[FDD - Radio Link Set Handling]:**

[FDD - The *First RLS Indicator* IE indicates if the concerned RL shall be considered part of the first RLS established towards this UE. The DRNS shall use the *First RLS Indicator* IE to determine the initial TPC pattern in the DL of the concerned RL and all RLs which are part of the same RLS, as described in [10], section 5.1.2.2.1.2.

[FDD - For each RL not having a common generation of the TPC commands in the DL with another RL, the DRNS shall assign to the RL a unique value for the *RL Set ID* IE which uniquely identifies the RL as an RL Set within the UE Context.]

[FDD - For all RLs having a common generation of the TPC commands in the DL with another RL, the DRNS shall assign to each RL the same value for the *RL Set ID* IE which uniquely identifies these RLs as members of the same RL Set within the UE Context.]

[FDD -The UL out-of-sync algorithm defined in ref. [10] shall, for each of the established RL Set(s), use the maximum value of the parameters *N\_OUTSYNC\_IND* and *T\_RLFAILURE* that are configured in the cells supporting the radio links of the RL Set. The UL in-sync algorithm defined in [10] shall, for each of the established RL Set(s), use the minimum value of the parameters *N\_INSYNC\_IND* that are configured in the cells supporting the radio links of the RL Set.]

[FDD - For all RLs having a common generation of E-RGCH and E-HICH related information with another RL, the DRNS shall assign to each RL the same value for the *E-DCH RL Set ID* IE which uniquely identifies these RLs as members of the same E-DCH RL Set within the UE Context.]

#### Response Message:

Upon receipt of the RADIO LINK SETUP REQUEST message, the DRNS allocates the requested type of channelisation codes and other physical channel resources for each RL and assigns a binding identifier and a transport layer address for each DCH, for each set of co-ordinated DCHs and for each DSCH [TDD - and USCH]. This information shall be sent to the SRNC in the RADIO LINK SETUP RESPONSE message when all the RLs have been successfully established.

After sending the RADIO LINK SETUP RESPONSE message the DRNS shall continuously attempt to obtain UL synchronisation on the Uu interface and start reception on the new RL.

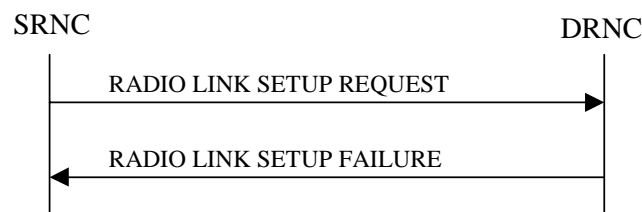
For each RL for which the *Delayed Activation* IE is not included in the RADIO LINK SETUP REQUEST message the DRNS shall:

- [FDD - start transmission on the DL DPDCH(s) of the new RL as specified in ref. [4].]
- [TDD - start transmission on the new RL immediately as specified in ref. [4].]

For each RL for which the *Delayed Activation* IE is included in the RADIO LINK SETUP REQUEST message, the DRNS shall:

- if the *Delayed Activation* IE indicates "Separate Indication":
  - not start any DL transmission for the concerned RL on the Uu interface;
- if the *Delayed Activation* IE indicates "CFN":
  - [FDD - start transmission on the DL DPDCH(s) of the new RL as specified in ref. [4], however never before the CFN indicated in the *Activation CFN* IE.]
  - [TDD - start transmission on the new RL at the CFN indicated in the *Activation CFN* IE as specified in ref. [4].]

### 8.3.1.3 Unsuccessful Operation



**Figure 6: Radio Link Setup procedure: Unsuccessful Operation**

If the establishment of at least one radio link is unsuccessful, the DRNC shall respond with a RADIO LINK SETUP FAILURE message. The DRNC shall include in the RADIO LINK SETUP FAILURE message a general *Cause* IE or a *Cause* IE for each failed radio link. The *Cause* IE indicates the reason for failure.

[FDD - If some radio links were established successfully, the DRNC shall indicate this in the RADIO LINK SETUP FAILURE message in the same way as in the RADIO LINK SETUP RESPONSE message.]

[FDD - If the RL identified by the *PDSCH RL ID* IE is a radio link in the DRNS and this RL is successfully established, then the DRNC shall allocate a DSCH-RNTI to the UE Context and include the *DSCH-RNTI* IE in the RADIO LINK SETUP FAILURE message.]

If the RADIO LINK SETUP REQUEST message includes a *C-ID* IE corresponding to a cell reserved for operator use and the *Permanent NAS UE Identity* IE is not present, the DRNC shall reject the procedure and send the RADIO LINK SETUP FAILURE message.

[FDD - If the accessed cell supports TFCI power control, the DRNC shall include the *TFCI PC Support Indicator* IE in the RADIO LINK SETUP FAILURE message.]

[FDD - If the RL identified by the *HS-PDSCH RL ID* IE is a radio link in the DRNS and this RL is successfully established, then the DRNC shall allocate a HS-DSCH-RNTI to the UE Context and include the *HS-DSCH-RNTI* IE and the *HS-DSCH FDD Information Response* IE in the RADIO LINK SETUP FAILURE message.]

Typical cause values are:

#### **Radio Network Layer Causes:**

- [FDD - UL Scrambling Code Already in Use];
- DL Radio Resources not Available;
- UL Radio Resources not Available;
- [FDD - Combining Resources not available];
- Combining not Supported
- Requested Configuration not Supported;
- Cell not Available;
- [FDD - Requested Tx Diversity Mode not Supported];
- Power Level not Supported;
- Number of DL codes not supported;
- Number of UL codes not supported;
- Dedicated Transport Channel Type not Supported;
- DL Shared Channel Type not Supported;
- [TDD - UL Shared Channel Type not Supported];
- [FDD - UL Spreading Factor not Supported];
- [FDD - DL Spreading Factor not Supported];
- CM not Supported;
- [FDD - DPC mode change not Supported];
- Cell reserved for operator use;
- Delayed Activation not supported.

#### **Transport Layer Causes:**

- Transport Resource Unavailable.

#### **Miscellaneous Causes:**

- Control Processing Overload;
- HW Failure;
- Not enough User Plane Processing Resources.

#### 8.3.1.4 Abnormal Conditions

If the DRNC receives either an S-RNTI or a D-RNTI which already has RL(s) established the DRNC shall send the RADIO LINK SETUP FAILURE message to the SRNC, indicating the reason for failure.

[FDD - If the RADIO LINK SETUP REQUEST message includes the *Active Pattern Sequence Information* IE, but the *Transmission Gap Pattern Sequence Information* IE is not present, then the DRNC shall reject the procedure using the RADIO LINK SETUP FAILURE message.]

[FDD - If the RADIO LINK SETUP REQUEST message includes both the *Initial DL TX Power* IE and the *Primary CPICH Ec/No* IE or does not include either of these IEs, then the DRNC shall reject the procedure using the RADIO LINK SETUP FAILURE message.]

If more than one DCH of a set of co-ordinated DCHs has the *QE-Selector* IE set to "selected" [TDD - or no DCH of a set of co-ordinated DCHs has the *QE-Selector* IE set to "selected"] the DRNS shall reject the Radio Link Setup procedure and shall respond with a RADIO LINK SETUP FAILURE message.

[FDD - If only the *Initial DL TX Power* IE or the *Uplink SIR Target* IE is included in the RADIO LINK SETUP REQUEST message, then DRNC shall reject the Radio Link Setup procedure and shall respond with the RADIO LINK SETUP FAILURE message.]

If the RADIO LINK SETUP REQUEST message includes a *DCH Information* IE with multiple *DCH Specific Info* IEs, and if the DCHs in the *DCH Information* IE do not have the same *Transmission Time Interval* IE in the *Semi-static Transport Format Information* IE, then the DRNC shall reject the procedure using the RADIO LINK SETUP FAILURE message.

[FDD - If the RADIO LINK SETUP REQUEST message includes the *Enhanced Primary CPICH Ec/No* IE, but not the *Primary CPICH Ec/No* IE, then the DRNC shall reject the procedure using the RADIO LINK SETUP FAILURE message.]

[FDD - If the RADIO LINK SETUP REQUEST message does not include the *Split Type* IE but includes *TFCI Signalling Mode* IE set to "Split", then the DRNC shall reject the procedure using the RADIO LINK SETUP FAILURE message.]

[FDD - If the RADIO LINK SETUP REQUEST message does not include the *Length of TFCI2* IE but the *Split type* IE is set to "Logical", then the DRNC shall reject the procedure using the RADIO LINK SETUP FAILURE message.]

[FDD - If the RADIO LINK SETUP REQUEST message includes the *Split Type* IE set to the value "Hard" and the *Length Of TFCI2* IE set to the value "1", "2", "5", "8", "9" or "10", then the DRNC shall reject the procedure using the RADIO LINK SETUP FAILURE message.]

[FDD - If the RADIO LINK SETUP REQUEST message does not include the *Split Type* IE but includes the *Length of TFCI2* IE, then the DRNC shall reject the procedure using the RADIO LINK SETUP FAILURE message.]

If the RADIO LINK SETUP REQUEST message includes the *Transport Layer Address* IE and the *Binding ID* IE in the *RL Specific DCH Information* IE included in the *RL Information* IE for a specific RL and the *Diversity Control Field* IE is set to "Must", the DRNC shall reject the Radio Link Setup procedure and the DRNC shall respond with the RADIO LINK SETUP FAILURE message.

If the RADIO LINK SETUP REQUEST message includes the *Transport Layer Address* IE or the *Binding ID* IE, and not both are present for a transport bearer intended to be established, the DRNC shall reject the Radio Link Setup procedure and the DRNC shall respond with the RADIO LINK SETUP FAILURE message.

If the RADIO LINK SETUP REQUEST message includes an *HS-PDSCH RL-ID* IE not referring to one of the radio links to be established, the DRNC shall reject the procedure using the RADIO LINK SETUP FAILURE message.

If the RADIO LINK SETUP REQUEST message contains the *HS-DSCH Information* IE and if the Priority Queues associated with the same *HS-DSCH MAC-d Flow ID* IE have the same *Scheduling Priority Indicator* IE value, the DRNC shall reject the procedure using the RADIO LINK SETUP FAILURE message.



## 8.3.2 Radio Link Addition

### 8.3.2.1 General

This procedure is used for establishing the necessary resources in the DRNS for one or more additional RLs towards a UE when there is already at least one RL established to the concerned UE via this DRNS.

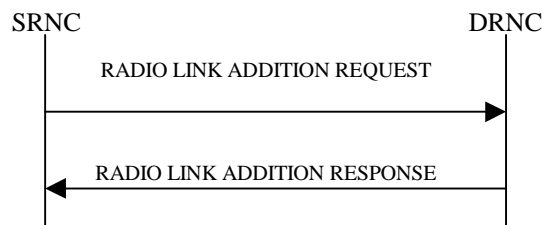
This procedure shall use the signalling bearer connection for the relevant UE Context.

The Radio Link Addition procedure shall not be initiated if a Prepared Reconfiguration exists, as defined in subclause 3.1.

[FDD - The Radio Link Addition procedure serves to establish one or more new Radio Links which do not contain the DSCH. If the DSCH shall be moved into a new Radio Link, the Radio Link reconfiguration procedure shall be applied.]

[TDD - The Radio Link Addition procedure serves to establish a new Radio Link with the DSCH and USCH included, if they existed before.]

### 8.3.2.2 Successful Operation



**Figure 7: Radio Link Addition procedure: Successful Operation**

The procedure is initiated with a RADIO LINK ADDITION REQUEST message sent from the SRNC to the DRNC.

Upon receipt, the DRNS shall reserve the necessary resources and configure the new RL(s) according to the parameters given in the message. Unless specified below, the meaning of parameters is specified in other specifications.

The DRNS shall prioritise resource allocation for the RL(s) to be established according to Annex A.

#### Transport Channel Handling:

[3.84 Mcps TDD - The DRNC shall include the *UL/DL DPCH Information* IE within the *UL/DL CCTrCH Information* IE for each CCTrCH that requires DPCHs.]

[1.28 Mcps TDD - The DRNC shall include the *UL/DL DPCH Information LCR* IE within the *UL/DL CCTrCH Information LCR* IE for each CCTrCH that requires DPCHs.]

#### DSCH:

[3.84 Mcps TDD - If the radio link to be added includes a DSCH, the DRNC shall include in the RADIO LINK ADDITION RESPONSE message a *DSCH Information Response* IE for each DSCH.]

[1.28 Mcps TDD - If the radio link to be added includes a DSCH, the DRNC shall include in the RADIO LINK ADDITION RESPONSE message a *DSCH Information Response LCR* IE for each DSCH.]

#### [TDD - USCH:]

[3.84 Mcps TDD - If the radio link to be added includes any USCHs, the DRNC shall include in the RADIO LINK ADDITION RESPONSE message a *USCH Information Response* IE for each USCH.]

[1.28 Mcps TDD - If the radio link to be added includes any USCHs, the DRNC shall include in the RADIO LINK ADDITION RESPONSE message a *USCH Information Response LCR* IE for each USCH.]

#### Physical Channels Handling:

##### [FDD -Compressed Mode]:

[FDD - If the RADIO LINK ADDITION REQUEST message includes the *Active Pattern Sequence Information* IE, the DRNS shall use the information to activate the indicated (all ongoing) Transmission Gap Pattern Sequence(s) in the new RL. The received *CM Configuration Change CFN* IE refers to the latest passed CFN with that value. The DRNS shall treat the received *TGCFN* IEs as follows:]

- [FDD - If any received *TGCFN* IE has the same value as the received *CM Configuration Change CFN* IE, the DRNS shall consider the concerned Transmission Gap Pattern Sequence as activated at that CFN.]
- [FDD - If any received *TGCFN* IE does not have the same value as the received *CM Configuration Change CFN* IE but the first CFN after the *CM Configuration Change CFN* with a value equal to the *TGCFN* IE has already passed, the DRNS shall consider the concerned Transmission Gap Pattern Sequence as activated at that CFN.]
- [FDD - For all other Transmission Gap Pattern Sequences included in the *Active Pattern Sequence Information* IE, the DRNS shall activate each Transmission Gap Pattern Sequence at the first CFN after the *CM Configuration Change CFN* with a value equal to the *TGCFN* IE for the Transmission Gap Pattern Sequence.]

FDD - If the *Active Pattern Sequence Information* IE is not included, the DRNS shall not activate the ongoing compressed mode pattern in the new RLs, but the ongoing pattern in the existing RL shall be maintained.]

[FDD - If some Transmission Gap Pattern sequences using SF/2 method are initialised in the DRNS, the DRNC shall include the *Transmission Gap Pattern Sequence Scrambling Code Information* IE in the *DL Code Information* IE in the RADIO LINK ADDITION RESPONSE message to indicate the Scrambling code change method that it selects for each channelisation code.]

#### [FDD - DL Code Information]:

[FDD - When more than one DL DPDCH are assigned per RL, the segmented physical channel shall be mapped on to DL DPDCHs according to [8]. When  $p$  number of DL DPDCHs are assigned to each RL, the first pair of DL Scrambling Code and FDD DL Channelisation Code Number corresponds to "*PhCH number 1*", the second to "*PhCH number 2*", and so on until the  $p$ th to "*PhCH number p*".]

#### [TDD - CCTrCH Handling]:

[TDD - If the *UL CCTrCH Information* IE is present, the DRNS shall configure the new UL CCTrCH(s) according to the parameters given in the message.]

[1.28Mcps TDD - If the *UL CCTrCH Information* IE includes the *TDD TPC Uplink Step Size* IE, the DRNS shall configure the uplink TPC step size according to the parameters given in the message, otherwise it shall use the step size configured in other radio link.]

[TDD - If the *DL CCTrCH Information* IE is present, the DRNS shall configure the new DL CCTrCH(s) according to the parameters given in the message.]

[TDD - If the *DL CCTrCH Information* IE includes the *TDD TPC Downlink Step Size* IE, the DRNS shall configure the downlink TPC step size according to the parameters given in the message, otherwise it shall use the step size configured in other radio link.]

#### [FDD – Phase Reference Handling]:

[FDD – If Primary CPICH is not to be used as a Phase Reference for this Radio Link, the DRNC shall include the *Primary CPICH Usage For Channel Estimation* IE set to the value "Primary CPICH shall not be used" in the RADIO LINK ADDITION RESPONSE message.]

#### General:

[FDD - The DRNS shall use the provided Uplink SIR Target value as the current target for the inner-loop power control.]

### Radio Link Handling:

#### Diversity Combination Control:

The *Diversity Control Field* IE indicates for each RL whether the DRNS shall combine the new RL with existing RL(s) or not on the Iur.

- If the *Diversity Control Field* IE is set to "May" (be combined with another RL), the DRNS shall decide for any of the alternatives.
- If the *Diversity Control Field* IE is set to "Must", the DRNS shall combine the RL with one of the other RL. When a new RL is to be combined the DRNS shall choose which RL(s) to combine it with.
- If the *Diversity Control Field* IE is set to "Must not", the DRNS shall not combine the RL with any other existing RL.

[FDD - The *Diversity Control Field* IE is only applicable for DCHs, in case of E-DCH it shall always be assumed to be set to "May".]

In the case of not combining a RL with a RL established with a previous Radio Link Setup or Radio Link Addition Procedure or a RL previously listed in the RADIO LINK ADDITION RESPONSE message, the DRNC shall indicate with the Diversity Indication in the *RL Information Response* IE in the RADIO LINK ADDITION RESPONSE message that no combining is done. In this case the DRNC shall include in the *DCH Information Response* IE both the *Transport Layer Address* IE and the *Binding ID* IE for the transport bearer to be established for each DCH of the RL in the RADIO LINK ADDITION RESPONSE message. In case of combining E-DCH, the E-DCH FDD Information Response IE shall be included in the RADIO LINK ADDITION RESPONSE message containing the *Binding ID* IE and the *Transport Layer Address* IE for the establishment of transport bearers for every E-DCH MAC-d flow being established.

In the case of combining with a RL established with a previous Radio Link Setup or Radio Link Addition Procedure or with a RL previously listed in this RADIO LINK ADDITION RESPONSE message, the DRNC shall indicate with the Diversity Indication in the *RL Information Response* IE in the RADIO LINK ADDITION RESPONSE message that the RL is combined. In this case, the *RL ID* IE indicates (one of) the previously established RL(s) or a RL previously listed in this RADIO LINK ADDITION RESPONSE message with which the new RL is combined.

[TDD - The DRNC shall always include in the RADIO LINK ADDITION RESPONSE message both the *Transport Layer Address* IE and the *Binding ID* IE for the transport bearer to be established for each DSCH and USCH of the RL.]

In the case of a set of co-ordinated DCHs, the DRNC shall include in the RADIO LINK ADDITION RESPONSE message the *Binding ID* IE and the *Transport Layer Address* IE for only one of the DCHs in the set of co-ordinated DCHs.

If the DRNS needs to limit the user rate in the uplink of a DCH due to congestion caused by the UL UTRAN Dynamic Resources (see subclause 9.2.1.79) when starting to utilise a new Radio Link, the DRNC shall include in the RADIO LINK ADDITION RESPONSE message the *Allowed UL Rate* IE in the *DCH Information Response* IE for this Radio Link.

If the DRNS needs to limit the user rate in the downlink of a DCH due to congestion caused by the DL UTRAN Dynamic Resources (see subclause 9.2.1.79) when starting to utilise a new Radio Link, the DRNC shall include in the RADIO LINK ADDITION RESPONSE message the *Allowed DL Rate* IE in the *DCH Information Response* IE for this Radio Link.

#### **[FDD - Transmit Diversity]:**

The DRNS shall activate any feedback mode diversity according to the received settings.

[FDD - If the cell in which the RL is being added is capable to provide Close loop Tx diversity, the DRNC shall indicate the Closed loop timing adjustment mode of the cell by including the *Closed Loop Timing Adjustment Mode* IE in the RADIO LINK ADDITION RESPONSE message.]

[FDD - When the *Transmit Diversity Indicator* IE is present the DRNS shall activate/deactivate the Transmit Diversity for each new Radio Link in accordance with the *Transmit Diversity Indicator* IE using the diversity mode of the existing Radio Link(s).]

#### **DL Power Control:**

[FDD - If the *Primary CPICH Ec/No* IE or the *Primary CPICH Ec/No* IE and the *Enhanced Primary CPICH Ec/No* IE measured by the UE are included for an RL in the RADIO LINK ADDITION REQUEST message, the DRNS shall use this in the calculation of the Initial DL TX Power for this RL. If the *Primary CPICH Ec/No* IE is not present, the DRNS shall set the Initial DL TX Power based on the power relative to the Primary CPICH power used by the existing RLs.]

[TDD - If [3.84Mcps TDD - the *DL Time Slot ISCP Info* IE] [1.28Mcps TDD - the *DL Time Slot ISCP Info LCR* IE] is included in the RADIO LINK ADDITION REQUEST message, the DRNS shall use it in the calculation of the Initial DL TX Power.]

[TDD - If the *Primary CCPCH RSCP Delta* IE is included, the DRNS shall assume that the reported value for Primary CCPCH RSCP is in the negative range as per [24], and the value is equal to the *Primary CCPCH RSCP Delta* IE. If the *Primary CCPCH RSCP Delta* IE is not included and the *Primary CCPCH RSCP* IE is included, the DRNS shall assume that the reported value is in the non-negative range as per [24], and the value is equal to the *Primary CCPCH RSCP* IE. The DRNS shall use it in the calculation of the Initial DL TX Power.]

[TDD - If the *Primary CCPCH RSCP* IE, *Primary CCPCH RSCP Delta* IE, [3.84Mcps TDD - and the *DL Time Slot ISCP Info* IE] [1.28Mcps TDD - and the *DL Time Slot ISCP Info LCR* IE] are not present, the DRNS shall set the Initial DL TX Power based on the power relative to the Primary CCPCH power used by the existing RL.]

[FDD - The Initial DL TX Power shall be applied until UL synchronisation is achieved on the Uu interface for that RLS or Power Balancing is activated. No inner loop power control or power balancing shall be performed during this period. The DL power shall then vary according to the inner loop power control (see ref. [10] subclause 5.2.1.2) and the power control procedure (see 8.3.7).]

[TDD - The Initial DL TX Power shall be applied until UL synchronisation is achieved on the Uu interface for that RL. No inner loop power control shall be performed during this period. The DL power shall then vary according to the inner loop power control (see ref. [22] subclause 4.2.3.3).]

[3.84 Mcps TDD - The DL TX power upper and lower limit is configured in the following way: The DRNC shall include the *Maximum DL TX Power* IE and *Minimum DL TX Power* IE in the RADIO LINK ADDITION RESPONSE message. If the maximum or minimum power needs to be different for particular DCH type CCTrCHs, the DRNC shall include the value(s) for that CCTrCH in the *CCTrCH Maximum DL TX Power* IE and *CCTrCH Minimum DL TX Power*. The DRNS shall not transmit with a higher power than indicated by the appropriate *Maximum DL TX Power* IE/*CCTrCH Maximum DL TX Power* IE or lower than indicated by the appropriate *Minimum DL TX Power* IE/*CCTrCH Minimum DL TX Power* IE on any DL DPCH within each CCTrCH of the RL.]

[1.28 Mcps TDD - The DL TX power upper and lower limit is configured in the following way: The DRNC shall include the *Maximum DL TX Power* IE and *Minimum DL TX Power* IE in the RADIO LINK ADDITION RESPONSE message. If the maximum or minimum power needs to be different for particular timeslots within a DCH type CCTrCH, the DRNC shall include the value(s) for that timeslot in the *Maximum DL TX Power* IE and *Minimum DL TX Power* within the *DL Timeslot Information LCR* IE. The DRNS shall not transmit with a higher power than indicated by the appropriate *Maximum DL TX Power* IE or lower than indicated by the appropriate *Minimum DL TX Power* IE on any DL DPCH within each timeslot of the RL.]

[FDD - If the *DPC Mode* IE is present in the RADIO LINK ADDITION REQUEST message, the DRNC shall apply the DPC mode indicated in the message, and be prepared that the DPC mode may be changed during the lifetime of the RL. If the *DPC Mode* IE is not present in the RADIO LINK ADDITION REQUEST message, DPC mode 0 shall be applied (see ref. [10]).]

### **UL Power Control:**

The DRNC shall also provide the configured UL Maximum SIR and UL Minimum SIR for every new RL to the SRNC in the RADIO LINK ADDITION RESPONSE message. These values are taken into consideration by DRNS admission control and shall be used by the SRNC as limits for the UL inner-loop power control target.

[FDD - The DRNS shall use the provided Uplink SIR Target value as the current target for the inner-loop power control.]

The DRNC shall provide the configured *Maximum DL TX Power* IE and *Minimum DL TX Power* IE for every new RL to the SRNC in the RADIO LINK ADDITION RESPONSE message. The DRNS shall not transmit with a higher power than indicated by the *Maximum DL TX Power* IE or lower than indicated by the *Minimum DL TX Power* IE on any DL DPCH of the RL [FDD - except during compressed mode, when the  $\delta P_{curr}$ , as described in ref.[10] subclause 5.2.1.3, shall be added to the maximum DL power for the associated compressed frame.]

[FDD - If the power balancing is active with the Power Balancing Adjustment Type of the UE Context set to "Individual" in the existing RL(s) and the RADIO LINK ADDITION REQUEST message includes the *DL Reference Power* IE, the DRNS shall activate the power balancing and use the *DL Reference Power* IE for the power balancing procedure in the new RL(s), if activation of power balancing by the RADIO LINK ADDITION REQUEST message is supported by the DRNS, according to subclause 8.3.15. In this case, the DRNC shall include the *DL Power Balancing Activation Indicator* IE in the *RL Information Response* IE in the RADIO LINK ADDITION RESPONSE message. If the DRNS starts the DL transmission and the activation of the power balancing at the same CFN, the initial power of the power balancing, i.e.  $P_{init}$  shall be set to the power level which is calculated based on the *Primary CPICH Ec/No* IE or the *Enhanced Primary CPICH Ec/No* IE (if received), or to the power level which is calculated based on the power relative to the Primary CPICH power used by the existing RLs.]

#### Neighbouring Cell Handling:

If there are UMTS neighbouring cell(s) to the cell in which a Radio Link was established then:

- The DRNC shall include in the RADIO LINK ADDITION RESPONSE message the *Neighbouring FDD Cell Information* IE and/or *Neighbouring TDD Cell Information* IE in the *Neighbouring UMTS Cell Information* IE for each neighbouring FDD cell and/or TDD cell respectively. In addition, if the information is available, the DRNC shall include in the RADIO LINK ADDITION RESPONSE message the *Frame Offset* IE, *Primary CPICH Power* IE, *Cell Individual Offset* IE, *STTD Support Indicator* IE, *Closed Loop Mode1 Support Indicator* IE, *Closed Loop Mode2 Support Indicator* IE, *Coverage Indicator* IE, *Antenna Co-location Indicator* IE and *HCS Prio* IE in the *Neighbouring FDD Cell Information* IE, and the *Frame Offset* IE, *Cell Individual Offset* IE, *DPCH Constant Value* IE and the *PCCPCH Power* IE, *Coverage Indicator* IE, *Antenna Co-location Indicator* IE and *HCS Prio* IE in the *Neighbouring TDD Cell Information* IE or the *Neighbouring TDD Cell Information LCR* IE. If the *Neighbouring TDD Cell Information* IE includes the *Sync Case* IE set to "Case1", the DRNC shall include the *Time Slot For SCH* IE in the *Neighbouring TDD Cell Information* IE. If the *Neighbouring TDD Cell Information* IE includes the *Sync Case* IE set to "Case2", the DRNC shall include the *SCH Time Slot* IE in the *Neighbouring TDD Cell Information* IE.
- If a UMTS neighbouring cell is not controlled by the same DRNC, the DRNC shall also include in the RADIO LINK ADDITION RESPONSE message the *CN PS Domain Identifier* IE and/or *CN CS Domain Identifier* IE which are the identifiers of the CN nodes connected to the RNC controlling the UMTS neighbouring cell.
- [FDD - The DRNC shall include in the RADIO LINK ADDITION RESPONSE message the *DPC Mode Change Support Indicator* IE for each neighbour cell in the *Neighbouring FDD Cell Information* IE if this information is available.]
- [FDD - The DRNC shall include the *Flexible Hard Split Support Indicator* IE if the DRNC is aware that the neighbouring cell supports Flexible Hard Split mode.]
- The DRNC shall include the *Cell Capability Container FDD* IE, the *Cell Capability Container TDD* IE and/or the *Cell Capability Container TDD LCR* IE if the DRNC is aware that the neighbouring cell supports any functionality listed in 9.2.2.D, 9.2.3.1a and 9.2.3.1b.
- For the UMTS neighbouring cells which are controlled by the DRNC, the DRNC shall report in the RADIO LINK SETUP RESPONSE message the restriction state of those cells, otherwise *Restriction State Indicator* IE may be absent. The DRNC shall include the *Restriction State Indicator* IE for the neighbouring cells which are controlled by the DRNC in the *Neighbouring FDD Cell Information* IE, the *Neighbouring TDD Cell Information* IE and the *Neighbouring TDD Cell Information LCR* IE.
- If available, the DRNC shall include the *SNA Information* IE for the concerned neighbouring cells in the *Neighbouring FDD Cell Information* IE, the *Neighbouring TDD Cell Information* IE and the *Neighbouring TDD Cell Information LCR* IE.

If there are GSM neighbouring cells to the cell(s) in which a radio link is established, the DRNC shall include the *Neighbouring GSM Cell Information IE* in the RADIO LINK ADDITION RESPONSE message for each of the GSM neighbouring cells. If available the DRNC shall include the *Cell Individual Offset IE*, and if the *Cell Individual Offset IE* alone cannot represent the value of the offset, the DRNC shall also include the *Extended GSM Cell Individual Offset IE* in the *Neighbouring GSM Cell Information IE*. If available the DRNC shall also include the *Coverage Indicator IE*, *Antenna Co-location Indicator IE* and *HCS Prio IE* in the *Neighbouring GSM Cell Information IE*. If available, the DRNC shall also include the *SNA Information IE* for the concerned neighbouring cells in the *Neighbouring GSM Cell Information IE*.

When receiving the *SNA Information IE* in the RADIO LINK ADDITION RESPONSE message, the SRNC should use it to restrict cell access based on SNA information. See also [40] for a broader description of the SNA access control.

If there are GERAN neighbouring cells to the cell(s) where a radio link is established, the DRNC shall include the *GERAN Cell Capability IE* in the *Neighbouring GSM Cell Information IE* that is included in the RADIO LINK ADDITION RESPONSE message for each of the GERAN cells.

If there are GERAN Iu-mode neighbouring cells to the cell(s) where a radio link is established, the DRNC shall include, if available, the *GERAN Classmark IE* in the *Neighbouring GSM Cell Information IE* that is included in the RADIO LINK ADDITION RESPONSE message for each of the GERAN Iu-mode neighbouring cells. Ref. [39] defines when the transmission of the *GERAN Classmark IE* will be required at the initiation of the Relocation Preparation procedure.

**[1.28Mcps TDD - Uplink Synchronisation Parameters LCR]:**

[1.28Mcps TDD - If the *Uplink Synchronisation Parameters LCR IE* is present, the DRNC shall use the indicated values of *Uplink synchronisation stepsize IE* and *Uplink synchronisation frequency IE* when evaluating the timing of the UL synchronisation.]

**[1.28Mcps TDD - Uplink Timing Advance Control LCR]:**

[1.28Mcps TDD - The DRNC shall include the *Uplink Timing Advance Control LCR IE* in the RADIO LINK ADDITION RESPONSE message.]

**General:**

If the RADIO LINK ADDITION REQUEST message includes the *RL Specific DCH Information IE*, the DRNC may use the transport layer address and the binding identifier received from the SRNC when establishing a transport bearer for the DCH or the set of co-ordinated DCHs.

[FDD - If the RADIO LINK ADDITION REQUEST message contains an *SSDT Cell Identity IE*, the DRNS shall, if supported, activate SSDT for the concerned new RL using the indicated SSDT Cell Identity.]

[FDD - If the RADIO LINK ADDITION REQUEST message includes the *Qth Parameter IE* in addition to the *SSDT Cell Identity IE*, the DRNS shall use the *Qth Parameter IE*, if Qth signalling is supported, when SSDT is activated in the concerned new RL.]

Depending on local configuration in the DRNS, the DRNC may include in the RADIO LINK ADDITION RESPONSE message the *UTRAN Access Point Position IE* and the geographical co-ordinates of the cell, represented either by the *Cell GAI IE* or by the *Cell GA Additional Shapes IE*. If the DRNC includes the *Cell GA Additional Shapes IE* in the RADIO LINK ADDITION RESPONSE message, it shall also include the *Cell GAI IE*.

For each Radio Link established in a cell in which at least one URA Identity is being broadcast, the DRNC shall include in the RADIO LINK ADDITION RESPONSE message a URA Information for this cell including the *URA ID IE*, the *Multiple URAs Indicator IE* indicating whether or not multiple URA Identities are being broadcast in the cell, and the *RNC-ID IEs* of all other RNCs that have at least one cell within the URA identified by the *URA ID IE*.

[FDD - If the UE has been allocated one or several DCH controlled by DRAC and if the DRNS supports the DRAC, the DRNC shall include in the RADIO LINK ADDITION RESPONSE message the *Secondary CCPCH Info IE* for the FACH in which the DRAC information is sent, for each Radio Link established in a cell in which DRAC is active. If the DRNS does not support DRAC, the DRNC shall not provide these IEs in the RADIO LINK ADDITION RESPONSE message.]

[3.84Mcps TDD - The DRNC shall include the *Secondary CCPCH Info TDD* IE in the RADIO LINK ADDITION RESPONSE message if at least one *DSCH Information Response* IE or *USCH Information Response* IE is included in the message and at least one DCH is configured for the radio link. The DRNC shall also include the *Secondary CCPCH Info TDD* IE in the RADIO LINK ADDITION RESPONSE message if at least one *DSCH Information Response* IE or *USCH Information Response* IE is included in the message and the SHCCH messages for this radio link will be transmitted over a different secondary CCPCH than selected by the UE from system information.]

[1.28 Mcps TDD - The DRNC shall include the *Secondary CCPCH Info TDD LCR* IE in the RADIO LINK ADDITION RESPONSE message if at least one *DSCH Information Response LCR* IE or *USCH Information Response LCR* IE is included in the message and at least one DCH is configured for the radio link. The DRNC shall also include the *Secondary CCPCH Info TDD LCR* IE in the RADIO LINK ADDITION RESPONSE message if at least one *DSCH Information Response LCR* IE or *USCH Information Response LCR* IE is included in the message and the SHCCH messages for this radio link will be transmitted over a different secondary CCPCH than selected by the UE from system information.]

If the *Permanent NAS UE Identity* IE is present in the RADIO LINK ADDITION REQUEST message, the DRNS shall store the information for the considered UE Context for the lifetime of the UE Context.

If the RADIO LINK ADDITION REQUEST message includes a *C-ID* IE corresponding to a cell reserved for operator use and the Permanent NAS UE Identity is available in the DRNC for the considered UE Context, the DRNC shall use this information to determine whether it can add the Radio Link on this cell or not.

If the HCS priority information is available in the DRNS, it shall include the *HCS Prio* IE for each of the established RLs in the RADIO LINK ADDITION RESPONSE message.

[FDD - If the accessed cell supports TFCI power control, the DRNC shall include the *TFCI PC Support Indicator* IE in the RADIO LINK ADDITION RESPONSE message.]

The DRNS shall start receiving on the new RL(s) after the RLs are successfully established.

#### [FDD - Radio Link Set Handling]:

[FDD - For each RL not having a common generation of the TPC commands in the DL with another RL, the DRNS shall assign to the RL a unique value for the *RL Set ID* IE which uniquely identifies the RL as an RL Set within the UE Context.]

[FDD - For all RLs having a common generation of the TPC commands in the DL with another new or existing RL, the DRNS shall assign to each RL the same value for the *RL Set ID* IE which uniquely identifies these RLs as members of the same RL Set within the UE Context.]

[FDD - After addition of the new RL(s), the UL out-of-sync algorithm defined in ref. [10] shall, for each of the previously existing and newly established RL Set(s), use the maximum value of the parameters *N\_OUTSYNC\_IND* and *T\_RLFAILURE* that are configured in the cells supporting the radio links of the RL Set. The UL in-sync algorithm defined in [10] shall, for each of the established RL Set(s), use the minimum value of the parameters *N\_INSYNC\_IND* that are configured in the cells supporting the radio links of the RL Set.]

[FDD - For all RLs having a common generation of E-RGCH and E-HICH related information with another RL, the DRNS shall assign to each RL the same value for the *E-DCH RL Set ID* IE which uniquely identifies these RLs as members of the same E-DCH RL Set within the UE Context.]

#### [FDD - E-DCH]:

If the *RL Information* IE in the RADIO LINK ADDITION REQUEST message contains the *RL specific E-DCH Information* IE for one Radio Link then:

- The DRNS shall setup the requested E-DCH resources on the Radio Link indicated by the *RL ID* IE in the *RL Information* IE.
- If the RADIO LINK ADDITION REQUEST message includes the *Transport Layer Address* IE and *Binding ID* IE in the *RL specific E-DCH Information* IE for an E-DCH MAC-d flow, then the DRNC may

use the transport layer address and the binding identifier received from the SRNC when establishing a transport bearer for the concerned E-DCH MAC-d flow.

- The DRNC shall include the *E-AGCH* and *E-RGCH* and *E-HICH FDD Scrambling Code IE* and the *E-RGCH* and *E-HICH Channelisation Code IE* and the corresponding *Sequence Number for E-RGCH IE* and the *Sequence Number for E-HICH IE* in the *E-DCH FDD DL Control Channel Information IE* in the *RADIO LINK ADDITION RESPONSE* message.

If the *RADIO LINK ADDITION REQUEST* message contains the *Serving E-DCH RL ID IE* then the DRNC shall allocate an E-RNTI and include this E-RNTI and the Channelisation Code of the corresponding E-AGCH in the *E-DCH FDD DL Control Channel Information IE* in the *RL Information IE* for the indicated RL in the *RADIO LINK ADDITION RESPONSE* message.]

#### Response message:

If all requested RLs are successfully added, the DRNC shall respond with a *RADIO LINK ADDITION RESPONSE* message.

After sending the *RADIO LINK ADDITION RESPONSE* message the DRNS shall continuously attempt to obtain UL synchronisation on the Uu interface.

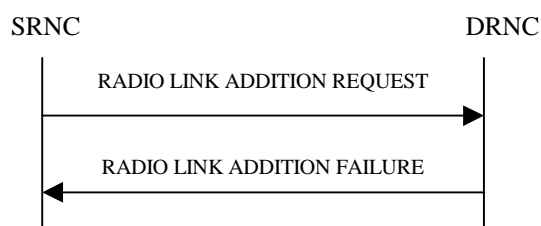
For each RL for which the *Delayed Activation IE* is not included in the *RADIO LINK ADDITION REQUEST* message the DRNS shall:

- [FDD -start transmission on the DL DPDCH(s) of the new RL as specified in ref. [4].]
- [TDD - start transmission on the new RL immediately as specified in ref. [4].]

For each RL for which the *Delayed Activation IE* is included in the *RADIO LINK ADDITION REQUEST* message, the DRNS shall:

- if the *Delayed Activation IE* indicates "Separate Indication":
  - not start any DL transmission for the concerning RL on the Uu interface;
- if the *Delayed Activation IE* indicates "CFN":
  - [FDD - start transmission on the DL DPDCH(s) of the new RL as specified in ref. [4], however never before the CFN indicated in the *Activation CFN IE*.]
  - [TDD - start transmission on the new RL at the CFN indicated in the *Activation CFN IE* as specified in ref. [4].]

### 8.3.2.3 Unsuccessful Operation



**Figure 8: Radio Link Addition procedure: Unsuccessful Operation**

If the establishment of at least one RL is unsuccessful, the DRNC shall respond with a *RADIO LINK ADDITION FAILURE* message. DRNC shall include in the *RADIO LINK ADDITION FAILURE* message a general *Cause IE* or a *Cause IE* for each failed radio link. The *Cause IE* indicates the reason for failure.

[FDD - If some RL(s) were established successfully, the DRNC shall indicate this in the *RADIO LINK ADDITION FAILURE* message in the same way as in the *RADIO LINK ADDITION RESPONSE* message.]

[FDD - If the accessed cell supports TFCI power control, the DRNC shall include the *TFCI PC Support Indicator IE* in the *RADIO LINK ADDITION FAILURE* message.]



Typical cause values are:

**Radio Network Layer Causes:**

- DL Radio Resources not Available;
- UL Radio Resources not Available;
- Combining Resources not Available;
- Combining not Supported
- Cell not Available;
- [FDD - Requested Tx Diversity Mode not Supported];
- Power Level not Supported;
- CM not Supported;
- Reconfiguration CFN not Elapsed;
- Number of DL Codes not Supported;
- Number of UL codes not Supported;
- [FDD - DPC mode change not Supported];
- Cell reserved for operator use;
- Delayed Activation not supported.

**Transport Layer Causes:**

- Transport Resource Unavailable.

**Miscellaneous Causes:**

- Control Processing Overload;
- HW Failure;
- Not enough User Plane Processing Resources.

### 8.3.2.4 Abnormal Conditions

If the RADIO LINK ADDITION REQUEST message includes a *C-ID* IE corresponding to a cell reserved for operator use and the Permanent NAS UE Identity is not available in the DRNC for the considered UE Context, the DRNC shall reject the procedure for this particular Radio Link and send the RADIO LINK ADDITION FAILURE message.

[FDD - If the RADIO LINK ADDITION REQUEST message includes the *Transmission Gap Pattern Sequence Status* IEs in the *Active Pattern Sequence Information* IE and it does not address exactly all ongoing compressed mode patterns the DRNS shall reject the Radio Link Addition procedure and shall respond with a RADIO LINK ADDITION FAILURE message with the *Cause* IE value "Invalid CM settings".]

[FDD - If the RADIO LINK ADDITION REQUEST message is used to establish a new RL without compressed mode when compressed mode is active for the existing RL(s) (as specified in subclause 8.3.2.2), and if at least one of the new RLs is to be established in a cell that has the same UARFCN (both UL and DL) as at least one cell with an already existing RL, the DRNS shall reject the Radio Link Addition procedure and shall respond with a RADIO LINK ADDITION FAILURE message with the cause value "Invalid CM settings".]

[FDD - If the power balancing is active with the Power Balancing Adjustment Type of the UE Context set to "Individual" in the existing RL(s) and if the *DL Reference Power* IEs are included in the *RL Information* IE but the *DL Reference Power* IE is not present for each RL in the *RL Information* IE, the DRNC shall reject the Radio Link Addition procedure and shall respond with a RADIO LINK ADDITION FAILURE message.]

[FDD - If the RADIO LINK ADDITION REQUEST message includes the *DL Reference Power* IEs in the *RL Information* IE but the power balancing is not active in the existing RL(s) or the power balancing is active with the Power Balancing Adjustment Type of the UE Context set to "Common" in the existing RL(s), the DRNC shall reject the Radio Link Addition procedure and shall respond with a RADIO LINK ADDITION FAILURE message with the cause value "Power Balancing status not compatible".]

[FDD - If the RADIO LINK ADDITION REQUEST message includes the *Enhanced Primary CPICH Ec/No* IE, but not the *Primary CPICH Ec/No* IE, then the DRNC shall reject the procedure using the RADIO LINK ADDITION FAILURE message.]

If the RADIO LINK ADDITION REQUEST message includes the *Transport Layer Address* IE and the *Binding ID* IE in the *RL Specific DCH Information* IE included in the *RL Information* IE for a specific RL and the *Diversity Control Field* IE is set to "Must", the DRNC shall reject the Radio Link Addition procedure and respond with the RADIO LINK ADDITION FAILURE message.

If the RADIO LINK ADDITION REQUEST message includes the *Transport Layer Address* IE or the *Binding ID* IE, and not both are present for a transport bearer intended to be established, the DRNC shall reject the Radio Link Addition procedure and respond with the RADIO LINK ADDITION FAILURE message.

### 8.3.3 Radio Link Deletion

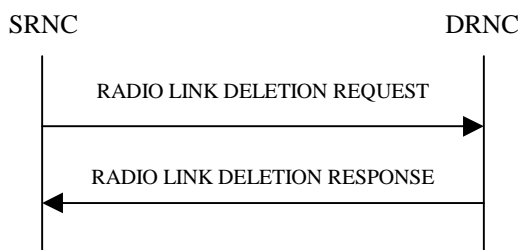
#### 8.3.3.1 General

The Radio Link Deletion procedure is used to release the resources in a DRNS for one or more established radio links towards a UE.

This procedure shall use the signalling bearer connection for the relevant UE Context.

The Radio Link Deletion procedure may be initiated by the SRNC at any time after establishing a Radio Link.

#### 8.3.3.2 Successful Operation



**Figure 9: Radio Link Deletion procedure, Successful Operation**

The procedure is initiated with a RADIO LINK DELETION REQUEST message sent from the SRNC to the DRNC.

Upon receipt of this message, the DRNS shall delete the radio link(s) identified by the *RL ID* IE(s) in the message, shall release all associated resources and shall respond to the SRNC with a RADIO LINK DELETION RESPONSE message.

If the radio link(s) to be deleted represent the last radio link(s) for the UE in the DRNS and if the UE is not using any common resources in the DRNS, then the DRNC shall release the UE Context.

[FDD - After deletion of the RL(s), the UL out-of-sync algorithm defined in ref. [10] shall for each of the remaining RL Set(s) use the maximum value of the parameters *N\_OUTSYNC\_IND* and *T\_RLFAILURE* that are configured in the cells supporting the radio links of the RL Set. The UL in-sync algorithm defined in ref. [10] shall for each of the remaining RL Set(s) use the minimum value of the parameters *N\_INSYNC\_IND* that are configured in the cells supporting the radio links of the RL Set.]

#### 8.3.3.3 Unsuccessful Operation

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### 8.3.3.4 Abnormal Conditions

If the RL indicated by the *RL ID* IE does not exist, the DRNC shall respond with the RADIO LINK DELETION RESPONSE message.

## 8.3.4 Synchronised Radio Link Reconfiguration Preparation

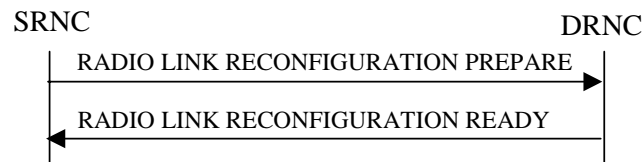
### 8.3.4.1 General

The Synchronised Radio Link Reconfiguration Preparation procedure is used to prepare a new configuration of Radio Link(s) related to one UE-UTRAN connection within a DRNS.

This procedure shall use the signalling bearer connection for the relevant UE Context.

The Synchronised Radio Link Reconfiguration Preparation procedure shall not be initiated if a Prepared Reconfiguration exists, as defined in subclause 3.1.

### 8.3.4.2 Successful Operation



**Figure 10: Synchronised Radio Link Reconfiguration Preparation procedure, Successful Operation**

The Synchronised Radio Link Reconfiguration Preparation procedure is initiated by the SRNC by sending the RADIO LINK RECONFIGURATION PREPARE message to the DRNC.

Upon receipt, the DRNS shall reserve necessary resources for the new configuration of the Radio Link(s) according to the parameters given in the message. Unless specified below, the meaning of parameters is specified in other specifications.

If the RADIO LINK RECONFIGURATION PREPARE message includes the *Allowed Queuing Time* IE the DRNS may queue the request the time corresponding to the value of the *Allowed Queuing Time* IE before starting to execute the request.

The DRNS shall prioritise resource allocation for the RL(s) to be modified according to Annex A.

#### **DCH Modification:**

If the RADIO LINK RECONFIGURATION PREPARE message includes any *DCHs To Modify* IEs, the DRNS shall treat them each as follows:

- If the *DCHs To Modify* IE includes multiple *DCH Specific Info* IEs then the DRNS shall treat the DCHs in the *DCHs To Modify* IE as a set of co-ordinated DCHs. The DRNS shall include these DCHs in the new configuration only if it can include all of them in the new configuration.
- If the *DCHs To Modify* IE includes the *UL FP Mode* IE for a DCH or a set of co-ordinated DCHs to be modified, the DRNS shall apply the new FP Mode in the Uplink of the user plane for the DCH or the set of co-ordinated DCHs in the new configuration.
- If the *DCHs To Modify* IE includes the *ToAWS* IE for a DCH or a set of co-ordinated DCHs to be modified, the DRNS shall apply the new ToAWS in the user plane for the DCH or the set of co-ordinated DCHs in the new configuration.
- If the *DCHs To Modify* IE includes the *ToAWE* IE for a DCH or a set of co-ordinated DCHs to be modified, the DRNS shall apply the new ToAWE in the user plane for the DCH or the set of co-ordinated DCHs in the new configuration.

- If the *DCHs To Modify* IE contains a *DCH Specific Info* IE which includes the *Frame Handling Priority* IE for a DCH to be modified, the DRNS should store this information for this DCH in the new configuration. The received *Frame Handling Priority* should be used when prioritising between different frames in the downlink on the radio interface in congestion situations within the DRNS once the new configuration has been activated.
- If the *DCHs To Modify* IE contains a *DCH Specific Info* IE which includes the *Traffic Class* IE for a DCH to be modified, the DRNS should store this information for this DCH in the new configuration. The *Traffic Class* IE may be used to determine the transport bearer characteristics to apply between DRNC and Node B for the related DCH or set of co-ordinated DCHs. The DRNC should ignore the *Traffic Class* IE if the *TrCH Source Statistics Descriptor* IE indicates the value "RRC".
- If the *DCHs To Modify* IE contains a *DCH Specific Info* IE which includes the *Transport Format Set* IE for the UL of a DCH to be modified, the DRNS shall apply the new *Transport Format Set* in the Uplink of this DCH in the new configuration.
- If the *DCHs to Modify* IE includes the *TNL QoS* IE for a DCH or a set of co-ordinated DCHs to be modified and if ALCAP is not used, the DRNS may store this information for this DCH in the new configuration. The *TNL QoS* IE may be used to determine the transport bearer characteristics to apply in the uplink for the related DCH or set of co-ordinated DCHs.
- If the *DCHs To Modify* IE contains a *DCH Specific Info* IE which includes the *Transport Format Set* IE for the DL of a DCH to be modified, the DRNS shall apply the new *Transport Format Set* in the Downlink of this DCH in the new configuration.
- If the *DCHs To Modify* IE contains a *DCH Specific Info* IE which includes the *Allocation/Retention Priority* IE, the DRNS shall apply the new *Allocation/Retention Priority* to this DCH in the new configuration according to Annex A.
- [FDD - If the *DCHs To Modify* IE contains a *DRAC Control* IE set to "requested" and if the DRNS supports the DRAC, the DRNC shall include in the RADIO LINK RECONFIGURATION READY message the *Secondary CCPCH Info* IE for the FACH in which the DRAC information is sent, for each Radio Link established in a cell in which DRAC is active. If the DRNS does not support DRAC, DRNC shall not provide these IEs in the RADIO LINK RECONFIGURATION READY message.]
- [TDD - If the *DCHs To Modify* IE includes the *CCTrCH ID* IE for the UL, the DRNS shall map the DCH onto the referenced UL CCTrCH in the new configuration.]
- [TDD - If the *DCHs To Modify* IE includes the *CCTrCH ID* IE for the DL, the DRNS shall map the DCH onto the referenced DL CCTrCH in the new configuration.]
- If the *DCHs To Modify* IE contains a *DCH Specific Info* IE which includes the *Guaranteed Rate Information* IE, the DRNS shall treat the included IEs according to the following:
  - If the *Guaranteed Rate Information* IE includes the *Guaranteed UL Rate* IE, the DRNS shall apply the new *Guaranteed Rate* in the uplink of this DCH in the new configuration. The DRNS may decide to request the SRNC to limit the user rate in the uplink of the DCH at any point in time after activating the new configuration. The DRNS may request the SRNC to reduce the user rate of the uplink of the DCH below the guaranteed bit rate, however, whenever possible the DRNS should request the SRNC to reduce the user rate between the maximum bit rate and the guaranteed bit rate.
  - If the *Guaranteed Rate Information* IE includes the *Guaranteed DL Rate* IE, the DRNS shall apply the new *Guaranteed Rate* in the downlink of this DCH in the new configuration. The DRNS may decide to request the SRNC to limit the user rate in the downlink of the DCH at any point in time after activating the new configuration. The DRNS may request the SRNC to reduce the user rate of the downlink of the DCH below the guaranteed bit rate, however, whenever possible the DRNS should request the SRNC to reduce the user rate between the maximum bit rate and the guaranteed bit rate.

#### DCH Addition:

If the RADIO LINK RECONFIGURATION PREPARE message includes any *DCHs To Add* IEs, the DRNS shall treat them each as follows:

- The DRNS shall reserve necessary resources for the new configuration of the Radio Link(s) according to the parameters given in the message and include these DCH in the new configuration.

- If the *DCH Information* IE includes a *DCHs To Add* IE with multiple *DCH Specific Info* IEs, the DRNS shall treat the DCHs in the *DCHs To Add* IE as a set of co-ordinated DCHs. The DRNS shall include these DCHs in the new configuration only if it can include all of them in the new configuration.
- If the *DCH Specific Info* IE includes the *Unidirectional DCH Indicator* IE set to "Uplink DCH only", the DRNS shall ignore the *Transport Format Set* IE for the downlink for this DCH. As a consequence this DCH is not included as a part of the downlink CCTrCH.
- [TDD - If the *DCH Specific Info* IE includes the *Unidirectional DCH Indicator* IE set to "Downlink DCH only", the DRNS shall ignore the *Transport Format Set* IE for the uplink for this DCH. As a consequence this DCH is not included as a part of the uplink CCTrCH.]
- [FDD - For each DCH which do not belong to a set of co-ordinated DCHs and which includes a *QE-Selector* IE set to "selected", the DRNS shall use the Transport channel BER from that DCH for the QE in the UL data frames. If no Transport channel BER is available for the selected DCH, the DRNS shall use the Physical channel BER for the QE, ref. [4]. If the *QE-Selector* IE is set to "non-selected", the DRNS shall use the Physical channel BER for the QE in the UL data frames, ref. [4].]
- For a set of co-ordinated DCHs, the DRNS shall use the Transport channel BER from the DCH with the *QE-Selector* IE set to "selected" for the QE in the UL data frames, ref. [4]. [FDD - If no Transport channel BER is available for the selected DCH, the DRNS shall use the Physical channel BER for the QE, ref. [4]. If all DCHs have the *QE-Selector* IE set to "non-selected", the DRNS shall use the Physical channel BER for the QE, ref. [4]. [TDD - If no Transport channel BER is available for the selected DCH, the DRNS shall use 0 for the QE, ref. [4].]
- The DRNS should store the *Frame Handling Priority* IE received for a DCH to be added in the new configuration. The received Frame Handling Priority should be used when prioritising between different frames in the downlink on the Uu interface in congestion situations within the DRNS once the new configuration has been activated.
- If the *TNL QoS* IE is included for a DCH or a set of co-ordinated DCHs and if ALCAP is not used, the DRNS may use this information to determine the transport bearer characteristics to apply for the uplink for the related DCH or set of co-ordinated DCHs.
- The DRNS should store the *Traffic Class* IE received for a DCH to be added in the new configuration. The *Traffic Class* IE may be used to determine the transport bearer characteristics to apply between DRNC and Node B for the related DCH or set of co-ordinated DCHs. The DRNC should ignore the *Traffic Class* IE if the *TrCH Source Statistics Descriptor* IE indicates the value "RRC".
- The DRNS shall use the included *UL FP Mode* IE for a DCH or a set of co-ordinated DCHs to be added as the new FP Mode in the Uplink of the user plane for the DCH or the set of co-ordinated DCHs in the new configuration.
- The DRNS shall use the included *ToAWS* IE for a DCH or a set of co-ordinated DCHs to be added as the new Time of Arrival Window Startpoint in the user plane for the DCH or the set of co-ordinated DCHs in the new configuration.
- The DRNS shall use the included *ToAWE* IE for a DCH or a set of co-ordinated DCHs to be added as the new Time of Arrival Window Endpoint in the user plane for the DCH or the set of co-ordinated DCHs in the new configuration.
- [TDD - The DRNC shall include the *Secondary CCPCH Info TDD* IE in the RADIO LINK RECONFIGURATION READY message if at least one DSCH or USCH exists in the new configuration.]
- [FDD - If the *DRAC Control* IE is set to "requested" in the *DCH Specific Info* IE for at least one DCH and if the DRNS supports the DRAC, the DRNC shall indicate in the RADIO LINK RECONFIGURATION READY message the *Secondary CCPCH Info* IE for the FACH in which the DRAC information is sent, for each radio link supported by a cell in which DRAC is active. If the DRNS does not support DRAC, the DRNC shall not provide these IEs in the RADIO LINK RECONFIGURATION READY message.]
- If the *DCHs To Add* IE contains a *DCH Specific Info* IE which includes the *Guaranteed Rate Information* IE, the DRNS shall treat the included IEs according to the following:
  - If the *Guaranteed Rate Information* IE includes the *Guaranteed UL Rate* IE, the DRNS shall apply the new Guaranteed Rate in the uplink of this DCH in the new configuration. The DRNS may decide to request the

SRNC to limit the user rate of the uplink of the DCH at any point in time after activating the new configuration. The DRNS may request the SRNC to reduce the user rate of the uplink of the DCH below the guaranteed bit rate, however, whenever possible the DRNS should request the SRNC to reduce the user rate between the maximum bit rate and the guaranteed bit rate. If the *DCH Specific Info* IE in the *DCHs To Add* IE does not include the *Guaranteed UL Rate* IE, the DRNS shall not limit the user rate of the uplink of the DCH.

- If the *Guaranteed Rate Information* IE includes the *Guaranteed DL Rate* IE, the DRNS shall apply the new Guaranteed Rate in the downlink of this DCH in the new configuration. The DRNS may decide to request the SRNC to limit the user rate of the downlink of the DCH at any point in time after activating the new configuration. The DRNS may request the SRNC to reduce the user rate of the downlink of the DCH below the guaranteed bit rate, however, whenever possible the DRNS should request the SRNC to reduce the user rate between the maximum bit rate and the guaranteed bit rate. If the *DCH Specific Info* IE in the *DCHs To Add* IE does not include the *Guaranteed DL Rate* IE, the DRNS shall not limit the user rate of the downlink of the DCH.
- [TDD - The DRNS shall apply the *CCTrCH ID* IE (for the DL) in the Downlink of this DCH in the new configuration.]
- [TDD - The DRNS shall apply the *CCTrCH ID* IE (for the UL) in the Uplink of this DCH in the new configuration.]

#### **DCH Deletion:**

If the RADIO LINK RECONFIGURATION PREPARE message includes any *DCH To Delete*, the DRNS shall not include the referenced DCHs in the new configuration.

If all of the DCHs belonging to a set of co-ordinated DCHs are requested to be deleted, the DRNS shall not include this set of co-ordinated DCHs in the new configuration.

#### **Physical Channel Modification:**

[FDD - If the RADIO LINK RECONFIGURATION PREPARE message includes an *UL DPCH Information* IE, the DRNS shall apply the parameters to the new configuration as follows:]

- [FDD - If the *UL DPCH Information* IE includes the *Uplink Scrambling Code* IE, the DRNS shall apply this Uplink Scrambling Code to the new configuration.]
- [FDD - If the *UL DPCH Information* IE includes the *Min UL Channelisation Code Length* IE, the DRNS shall apply the new Min UL Channelisation Code Length in the new configuration. The DRNS shall apply the contents of the *Max Number of UL DPDCHs* IE (if it is included) in the new configuration.]
- [FDD - If the *UL DPCH Information* IE includes the *TFCS* IE, the DRNS shall use the *TFCS* IE for the UL when reserving resources for the uplink of the new configuration. The DRNS shall apply the new TFCS in the uplink of the new configuration.]
- [FDD - If the *UL DPCH Information* IE includes the *UL DPCCH Slot Format* IE, the DRNS shall apply the new Uplink DPCCH Slot Format to the new configuration.]
- [FDD - If the *UL DPCH Information* IE includes the *UL SIR Target* IE, the DRNS shall use the value for the UL inner loop power control when the new configuration is being used.]
- [FDD - If the *UL DPCH Information* IE includes the *Puncture Limit* IE, the DRNS shall apply the value in the uplink of the new configuration.]
- [FDD - If the *UL DPCH Information* IE includes the *Diversity Mode* IE, the DRNS shall apply diversity according to the given value.]
- [FDD - If the *UL DPCH Information* IE includes an *SSDT Cell Identity Length* IE and/or an *S-Field Length* IE, the DRNS shall apply the values in the new configuration.]

[FDD - If the RADIO LINK RECONFIGURATION PREPARE message includes a *DL DPCH Information* IE, the DRNS shall apply the parameters to the new configuration as follows:]

- [FDD - If the *DL DPCH Information* IE includes the *Number of DL Channelisation Codes* IE, the DRNS shall allocate given number of Downlink Channelisation Codes per Radio Link and apply the new Downlink

Channelisation Code(s) to the new configuration. Each Downlink Channelisation Code allocated for the new configuration shall be included in the RADIO LINK RECONFIGURATION READY message within the *DL Code Information IE* as a *FDD DL Channelisation Code Number IE* when sent to the SRNC. If some Transmission Gap Pattern sequences using "SF/2" method are already initialised in the DRNS, DRNC shall include the *Transmission Gap Pattern Sequence Scrambling Code Information IE* in the RADIO LINK RECONFIGURATION READY message in case the DRNS selects to change the Scrambling code change method for one or more DL Channelisation Code.]

- [FDD - When more than one DL DPDCH are assigned per RL, the segmented physical channel shall be mapped on to DL DPDCHs according to [8]. When  $p$  number of DL DPDCHs are assigned to each RL, the first pair of DL Scrambling Code and FDD DL Channelisation Code Number corresponds to "*PhCH number 1*", the second to "*PhCH number 2*", and so on until the  $p$ th to "*PhCH number p*".]
- [FDD - If the *DL DPCH Information IE* includes the *TFCS IE*, the DRNS shall use the *TFCS IE* for the DL when reserving resources for the downlink of the new configuration. The DRNS shall apply the new TFCS in the Downlink of the new configuration.]
- [FDD - If the *DL DPCH Information IE* includes the *DL DPCH Slot Format IE*, the DRNS shall apply the new slot format used in DPCH in DL.]
- [FDD - If the *DL DPCH Information IE* includes the *TFCI Signalling Mode IE*, the DRNS shall apply the new signalling mode of the TFCI.]
- [FDD - If the *DL DPCH Information IE* includes the *Multiplexing Position IE*, the DRNS shall apply the new parameter to define whether fixed or flexible positions of transport channels shall be used in the physical channel.]
- [FDD - If the *DL DPCH Information IE* includes the *Limited Power Increase IE* set to "Used", the DRNS shall, if supported, use Limited Power Increase according to ref. [10] subclause 5.2.1 for the inner loop DL power control in the new configuration.]
- [FDD - If the *DL DPCH Information IE* includes the *Limited Power Increase IE* set to "Not Used", the DRNS shall not use Limited Power Increase for the inner loop DL power control in the new configuration.]
- [FDD - If the RADIO LINK RECONFIGURATION PREPARE message does not include the *Length of TFCI2 IE* and the *Split type IE* is present with the value "Hard", then the DRNS shall assume the length of the TFCI (field 2) is 5 bits.]
- [FDD - If the RADIO LINK RECONFIGURATION PREPARE message includes *Split Type IE*, then the DRNS shall apply this information to the new configuration of TFCI.]
- [FDD - If the *DL DPCH Information IE* includes the *Length of TFCI2 IE*, the DRNS shall apply this information to the length of TFCI(field 2) in the new configuration.]

[FDD - If the RADIO LINK RECONFIGURATION PREPARE message includes the *Transmission Gap Pattern Sequence Information IE*, the DRNS shall store the new information about the Transmission Gap Pattern Sequences to be used in the new Compressed Mode Configuration. Any Transmission Gap Pattern Sequences already existing in the previous Compressed Mode Configuration are replaced by the new sequences once the new Compressed Mode Configuration has been activated. This new Compressed Mode Configuration shall be valid in the DRNS until the next Compressed Mode Configuration is configured in the DRNS or until the last Radio Link is deleted.]

[FDD - If the RADIO LINK RECONFIGURATION PREPARE message includes the *Transmission Gap Pattern Sequence Information IE* and the *Downlink Compressed Mode Method IE* in one or more Transmission Gap Pattern Sequence within the *Transmission Gap Pattern Sequence Information IE* is set to "SF/2", the DRNC shall include the *Transmission Gap Pattern Sequence Scrambling Code Information IE* in the RADIO LINK RECONFIGURATION READY message indicating for each Channelisation Code whether the alternative scrambling code shall be used or not].

[FDD - E-DPCH Handling: If the *E-DPCH Information IE* is included, the *UL DPDCH Indicator for E-DCH operation IE* in the *UL DPCH Information* shall be present as well. If the *UL DPDCH Indicator for E-DCH operation IE* is set to "UL DPDCH not present" the *Min UL Channelisation Code Length IE*, the *Puncture Limit IE* and the *TFCS IE*, within the *UL DPCH Information IE* shall be ignored.]

[FDD - If the RADIO LINK RECONFIGURATION PREPARE message includes an *E-DPCH Information IE*, the DRNS shall apply the parameters to the new configuration as follows:]

- [FDD - If the *E-DPCH Information IE* includes the *Min UL Channelisation Code Length for EDCH FDD IE*, the DRNS shall apply the new *Min UL Channelisation Code Length* in the new configuration. The DRNS shall apply the contents of the *Max Number of E-DPDCHs IE* (if it is included) in the new configuration.]
- [FDD - If the *E-DPCH Information IE* includes the *Puncture Limit IE*, the DRNS shall apply the value in the *uplink of the new configuration*]
- [FDD - If the *E-DPCH Information IE* includes the *E-TFCS IE*, the DRNS shall use the *E-TFCS IE* for the *E-DCH* when reserving resources for the *uplink of the new configuration*. The DRNS shall apply the new *TFCS in the uplink of the new configuration*.]
- [FDD - If the *E-DPCH Information IE* includes the *E-DPCCH Slot Format IE*, the DRNS shall apply the new *E-DPCCH Slot Format* to the new configuration.]
- [FDD - If the *E-DPCH Information IE* includes the *E-TTI IE*, the DRNS shall use the value when the new configuration is being used.]

#### [TDD - UL/DL CCTrCH Modification]

[TDD - If the RADIO LINK RECONFIGURATION PREPARE message includes any *UL CCTrCH To Modify* IEs or *DL CCTrCH To Modify* IEs, then the DRNS shall treat them each as follows:]

- [TDD - If any of the *UL CCTrCH To Modify* IEs or *DL CCTrCH To Modify* IEs includes any of the *TFCS IE*, *TFCI coding IE*, *Puncture limit IE*, or *TPC CCTrCH ID* IEs the DRNS shall apply these as the new values, otherwise the previous values specified for this CCTrCH are still applicable.]
- [TDD - If any of the following listed DPCH information IEs are modified in the new prepared configuration, the DRNC shall include in the RADIO LINK RECONFIGURATION READY message the IEs indicating the new values: *Repetition Period IE*, *Repetition Length IE*, *TDD DPCH Offset IE*, [3.84Mcps TDD - *UL Timeslot Information IE*,] [1.28Mcps TDD - *UL Timeslot Information LCR IE*,] [3.84Mcps TDD - *DL Timeslot Information IE*,] [1.28Mcps TDD - *DL Timeslot Information LCR IE*,] [3.84Mcps TDD - *Midamble Shift And Burst Type IE*,] [1.28Mcps TDD - *Midamble Shift LCR IE*,] *TFCI Presence IE*, [3.84Mcps TDD - *TDD Channelisation Code IE*,] [1.28Mcps TDD - and/or *TDD Channelisation Code LCR IE*,] [1.28Mcps TDD - *TDD UL DPCH Time Slot Format LCR IE* or *TDD DL DPCH Time Slot Format LCR IE*.]
- [1.28Mcps TDD - If the *UL CCTrCH To Modify* IE includes the *UL SIR Target IE*, the DRNS shall use the value for the UL inner loop power control according [12] and [22] in the new configuration.]
- [TDD - If any of the *DL CCTrCH To Modify* IEs includes any *TPC CCTrCH ID* IEs, the DRNS shall apply these as the new values, otherwise the previous values specified for this CCTrCH are still applicable.]
- [1.28Mcps TDD - If the *UL CCTrCH to Modify* IE includes the *TDD TPC Uplink Step Size IE*, the DRNS shall apply this value to the uplink TPC step size in the new configuration.]
- [TDD - If the *DL CCTrCH to Modify* IE includes the *TDD TPC Downlink Step Size IE*, the DRNS shall apply this value to the downlink TPC step size in the new configuration.]

#### [TDD - UL/DL CCTrCH Addition]

[TDD - If the RADIO LINK RECONFIGURATION PREPARE message includes any *UL CCTrCH To Add* IEs or *DL CCTrCH To Add* IEs, the DRNS shall include this CCTrCH in the new configuration.]

[TDD - If the RADIO LINK RECONFIGURATION PREPARE message includes any *DCHs to Add* IEs, the DRNC shall include in the RADIO LINK RECONFIGURATION READY message the DPCH information in [3.84Mcps TDD - *UL DPCH to be Added IE/DL DPCH to be Added IEs*] [1.28Mcps TDD - *UL DPCH to be Added LCR IE/DL DPCH to be Added LCR IEs*] [3.84Mcps TDD - If no UL DPCH is active before a reconfiguration which adds an UL DPCH, and if a valid Rx Timing Deviation measurement is known in DRNC, then the DRNC shall include the *Rx Timing Deviation IE* in the RADIO LINK RECONFIGURATION READY message].]

[TDD - If the RADIO LINK RECONFIGURATION PREPARE message includes the *TDD TPC Downlink Step Size IE* within a *DL CCTrCH To Add* IE, the DRNS shall set the TPC step size of that CCTrCH to that value, otherwise the DRNS shall use the same value as the lowest numbered DL CCTrCH in the current configuration.]



[1.28Mcps TDD - The DRNS shall use the *UL SIR Target* IE in the *UL CCH To Add* IE as the UL SIR value for the inner loop power control for this CCH according [12] and [22] in the new configuration.]

[TDD - If any of the *DL CCH To Add* IEs includes any *TPC CCH ID* IEs, the DRNS shall configure the identified UL CCHs with TPC according to the parameters given in the message.]

[1.28Mcps TDD - If the *UL CCH To Add* IE includes *TDD TPC Uplink Step Size* IE, the DRNS shall apply the uplink TPC step size in the new configuration.]

#### [TDD - UL/DL CCH Deletion]

[TDD - If the RADIO LINK RECONFIGURATION PREPARE message includes any *UL CCH To Delete* IEs or *DL CCH To Delete* IEs, the DRNS shall remove this CCH in the new configuration, and the DRNC shall include in the RADIO LINK RECONFIGURATION READY message corresponding *UL DPCH to be Deleted* IEs and *DL DPCH to be Deleted* IEs.]

#### SSDT Activation/Deactivation:

- [FDD - If the *RL Information* IE includes the *SSDT Indication* IE set to "SSDT Active in the UE", then in the new configuration the DRNS shall activate SSDT, if supported, using the *SSDT Cell Identity* IE in *RL Information* IE, and the *SSDT Cell Identity Length* IE in *UL DPCH Information* IE.]
- [FDD - If the *RL Information* IE includes the *Qth Parameter* IE and the *SSDT Indication* IE set to "SSDT Active in the UE", the DRNS shall use the *Qth Parameter* IE, if Qth signalling is supported, when SSDT is activated in the new configuration.]
- [FDD - If the *RL Information* IE includes the *SSDT Indication* IE set to "SSDT not Active in the UE", the DRNS shall deactivate SSDT in the new configuration.]

#### DL Power Control:

- [FDD - If the *RL Information* IE includes the *DL Reference Power* IEs and power balancing is active, DRNS shall update the reference power of the power balancing in the indicated RL(s), if updating of power balancing parameters by the RADIO LINK RECONFIGURATION PREPARE message is supported, at the CFN in the RADIO LINK RECONFIGURATION COMMIT message, according to subclause 8.3.15, using the *DL Reference Power* IE. If the CFN modulo the value of the *Adjustment Period* IE is not equal to 0, the power balancing continues with the old reference power until the end of the current adjustment period, and the updated reference power shall be used from the next adjustment period.]

[FDD - If updating of power balancing parameters by the RADIO LINK RECONFIGURATION PREPARE message is supported by the DRNS, the DRNC shall include the *DL Power Balancing Updated Indicator* IE in the *RL Information Response* IE for each affected RL in the RADIO LINK RECONFIGURATION READY message.]

#### DSCH Addition/Modification/Deletion:

If the RADIO LINK RECONFIGURATION PREPARE message includes any *DSCH To Add*, *DSCH To Modify* or *DSCH To Delete* IEs, then the DRNS shall use this information to add/modify/delete the indicated DSCH channels to/from the radio link, in the same way as the DCH info is used to add/modify/release DCHs.

If the RADIO LINK RECONFIGURATION PREPARE message includes any *DSCH To Add* IE, then the DRNS shall use the *Allocation/Retention Priority* IE, *Scheduling Priority Indicator* IE and *TrCH Source Statistics Descriptor* IE to define a set of DSCH Priority classes each of which is associated with a set of supported MAC-c/sh SDU lengths.

The DRNC shall include in the RADIO LINK RECONFIGURATION READY message both the *Transport Layer Address* IE and the *Binding ID* IE for the transport bearer to be established for each added DSCH.

If the RADIO LINK RECONFIGURATION PREPARE message includes any *DSCH To Add* IE, then the DRNS may use the *Traffic Class* IE to determine the transport bearer characteristics to apply between DRNC and Node B for the related DSCHs.

[FDD - If the *DSCHs To Add* IE includes the *Enhanced DSCH PC* IE, the DRNS shall activate enhanced DSCH power control in accordance with ref. [10] subclause 5.2.2, if supported, using either:]

- [FDD - the *SSDT Cell Identity for EDSCHPC* IE in the *RL Information* IE, if the *SSDT Cell Identity* IE is not included in the *RL Information* IE or]

- [FDD - the *SSDT Cell Identity* IE in the *RL Information* IE, if both the *SSDT Cell Identity* IE and the *SSDT Cell Identity for EDSCHPC* are included in the *RL Information* IE.]

[FDD - together with the *SSDT Cell Identity Length* IE in *UL DPCH Information* IE, and *Enhanced DSCH PC* IE, in the new configuration.]

[FDD - If the enhanced DSCH power control is activated and the TFCI PC Mode 2 is supported, the primary/secondary status determination in the enhanced DSCH power control shall be applied to the TFCI power control in DSCH hard split mode.]

If the RADIO LINK RECONFIGURATION PREPARE message includes any *DSCH To Modify* IE, then the DRNS shall treat them each as follows:

- The DRNC shall include in the RADIO LINK RECONFIGURATION READY message both the *Transport Layer Address* IE and the *Binding ID* IE for any new transport bearer to be established for each modified DSCH.
- [FDD - If the *DSCH To Modify* IE includes any *DSCH Info* IEs, then the DRNS shall treat them each as follows:]
  - [FDD - If the *DSCH Info* IE includes any of the *Allocation/Retention Priority* IE, *Scheduling Priority Indicator* IE or *TrCH Source Statistics Descriptor* IE, the DRNS shall use them to update the set of DSCH Priority classes each of which is associated with a set of supported MAC-c/sh SDU lengths.]
  - [FDD - If the *DSCH Info* IE includes any of the *Transport Format Set* IE or *BLER* IE, the DRNS shall apply the parameters to the new configuration.]
  - [FDD - If the *DSCH Info* IE includes the *Traffic Class* IE, the DRNS may use this information to determine the transport bearer characteristics to apply between DRNC and Node B for the related DSCHs.]
- [FDD - If the *DSCH To Modify* IE includes the *PDSCH RL ID* IE, then the DRNS shall use it as the new DSCH RL identifier.]
- [FDD - If the indicated PDSCH RL ID is in the DRNS and there was no DSCH-RNTI allocated to the UE Context, the DRNC shall allocate a DSCH-RNTI to the UE Context and include the *DSCH-RNTI* IE in the RADIO LINK RECONFIGURATION READY message.]
- [FDD - If the indicated PDSCH RL ID is in the DRNS and there was a DSCH-RNTI allocated to the UE Context, the DRNC shall allocate a new DSCH-RNTI to the UE Context, release the old DSCH-RNTI and include the *DSCH-RNTI* IE in the RADIO LINK RECONFIGURATION READY message.]
- [FDD - If the indicated PDSCH RL ID is not in the DRNS and there was a DSCH-RNTI allocated to the UE Context, the DRNC shall release this DSCH-RNTI.]
- [FDD - If the *DSCH To Modify* IE includes the *Transport Format Combination Set* IE, then the DRNS shall use it as the new Transport Format Combination Set associated with the DSCH.]
- [TDD - If the *DSCHs To Modify* IE includes the *CCTrCH ID* IE, then the DRNS shall map the DSCH onto the referenced DL CCTrCH.]
- [TDD - If the *DSCHs To Modify* IE includes any of the *Allocation/Retention Priority* IE, *Scheduling Priority Indicator* IE or *TrCH Source Statistics Descriptor* IE, the DRNS shall use them to update the set of DSCH Priority classes each of which is associated with a set of supported MAC-c/sh SDU lengths.]
- [TDD - If the *DSCHs To Modify* IE includes any of the *Transport Format Set* IE or *BLER* IE, the DRNS shall apply the parameters to the new configuration.]
- [TDD - If the *DSCHs To Modify* IE includes the *Traffic Class* IE, the DRNS may use this information to determine the transport bearer characteristics to apply between DRNC and Node B for the related DSCHs.]
- [FDD - If the *DSCHs To Modify* IE includes the *Enhanced DSCH PC Indicator* IE set to "Enhanced DSCH PC Active in the UE ", the DRNS shall activate enhanced DSCH power control in accordance with ref. [10] subclause 5.2.2, if supported, using either:]
  - [FDD - the *SSDT Cell Identity for EDSCHPC* IE in *RL Information* IE, if the *SSDT Cell Identity* IE is not included in the *RL Information* IE or]

- [FDD - the *SSDT Cell Identity* IE in the *RL Information* IE, if both the *SSDT Cell Identity* IE and the *SSDT Cell Identity for EDSCHPC* are included in the *RL Information* IE.]

[FDD - together with the *SSDT Cell Identity Length* IE in *UL DPCH Information* IE, and *Enhanced DSCH PC* IE, in the new configuration.]

- [FDD - If the *DSCHs To Modify* IE includes the *Enhanced DSCH PC Indicator* IE set to "Enhanced DSCH PC not Active in the UE", the DRNS shall deactivate enhanced DSCH power control in the new configuration.]

[FDD - If the enhanced DSCH power control is activated and the TFCI PC Mode 2 is supported, the primary/secondary status determination in the enhanced DSCH power control shall be applied to the TFCI power control in DSCH hard split mode.]

[FDD - If the RADIO LINK RECONFIGURATION PREPARE message includes a *DSCHs To Delete* IE requesting the deletion of all DSCH resources for the UE Context, then the DRNC shall release the DSCH-RNTI allocated to the UE Context, if there was one.]

[3.84 Mcps TDD - The DRNC shall include the *Secondary CCPCH Info TDD* IE in the RADIO LINK RECONFIGURATION READY message if a DSCH is added and at least one DCH exists in the new configuration. The DRNC shall also include the *Secondary CCPCH Info TDD* IE in the RADIO LINK RECONFIGURATION READY message if the SHCCH messages for this radio link will be transmitted over a different secondary CCPCH than selected by the UE from system information.]

[FDD - If the RADIO LINK RECONFIGURATION PREPARE message includes the *Enhanced DSCH PC Indicator* IE set to "Enhanced DSCH PC not Active in the UE", the DRNS shall deactivate enhanced DSCH power control in the new configuration.]

If the requested modifications are allowed by the DRNS and the DRNS has successfully reserved the required resources for the new configuration of the Radio Link(s), it shall respond to the SRNC with the RADIO LINK RECONFIGURATION READY message.

The DRNC shall include the *DSCH Initial Window Size* IE in the RADIO LINK RECONFIGURATION READY message for each DSCH, if the DRNS allows the SRNC to start transmission of MAC-c/sh SDUs before the DRNS has allocated capacity on user plane as described in [32].

#### [TDD USCH Addition/Modification/Deletion]

[TDD - If the RADIO LINK RECONFIGURATION PREPARE message includes any *USCH To Modify*, *USCH To Add* or *USCH To Delete* IEs, then the DRNS shall use this information to add/modify/delete the indicated USCH channels to/from the radio link, in the same way as the DCH info is used to add/modify/release DCHs.]

[TDD - If the RADIO LINK RECONFIGURATION PREPARE message includes any *USCH To Add* IE, then, the DRNS shall use the *Allocation/Retention Priority* IE, *Scheduling Priority Indicator* IE and *TrCH Source Statistics Descriptor* IE to define a set of USCH Priority classes each of which is associated with a set of supported MAC-c/sh SDU lengths.]

[TDD - If the RADIO LINK RECONFIGURATION PREPARE message includes any *USCH To Add* IE, then the DRNS may use the *Traffic Class* IE to determine the transport bearer characteristics to apply between DRNC and Node B for the related USCHs.]

[TDD – If the RADIO LINK RECONFIGURATION PREPARE message includes any *USCH To Add* IE, if the *TNL QoS* IE is included and if ALCAP is not used, the DRNS may use the *TNL QoS* IE to determine the transport bearer characteristics to apply for the related USCHs.]

[TDD - The DRNC shall include in the RADIO LINK RECONFIGURATION READY message both the *Transport Layer Address* IE and the *Binding ID* IE for the transport bearer to be established for each added USCH.]

[TDD - If the RADIO LINK RECONFIGURATION PREPARE message includes any *USCH To Modify* IE, then the DRNS shall treat them each as follows:]

- [TDD - If the *USCH To Modify* IE includes any of the *Allocation/Retention Priority* IE, *Scheduling Priority Indicator* IE or *TrCH Source Statistics Descriptor* IE, the DNRS shall use them to update the set of USCH Priority classes.]

- [TDD - If the *USCH To Modify* IE includes any of the *CCTrCH ID* IE, *Transport Format Set* IE, *BLER* IE or *RB Info* IE, the DRNS shall apply the parameters to the new configuration.]
- [TDD - If the *USCHs To Modify* IE includes the *Traffic Class* IE, the DRNS may use this information to determine the transport bearer characteristics to apply between DRNC and Node B for the related USCHs.]
- [TDD - The DRNC shall include the *Secondary CCPCH Info TDD* IE in the RADIO LINK RECONFIGURATION READY message if a USCH is added and at least one DCH exists in the new configuration. The DRNC shall also include the *Secondary CCPCH Info TDD* IE in the RADIO LINK RECONFIGURATION READY message if the SHCCH messages for this radio link will be transmitted over a different secondary CCPCH than selected by the UE from system information.]
- [TDD – if the *TNL QoS* IE is included and if ALCAP is not used, the DRNS may use the *TNL QoS* IE to determine the transport bearer characteristics to apply for the related USCHs.]
- [TDD - The DRNC shall include in the RADIO LINK RECONFIGURATION READY message both the *Transport Layer Address* IE and the *Binding ID* IE for any new transport bearer to be established for each modified USCH.]

#### RL Information:

[FDD - If the *RL Information* IE includes the *DL DPCH Timing Adjustment* IE, the DRNS shall adjust the timing of the radio link accordingly in the new configuration.]

#### HS-DSCH Setup:

If the *HS-DSCH Information* IE is present in the RADIO LINK RECONFIGURATION PREPARE message, then:

- The DRNS shall setup the requested HS-PDSCH resources on the Serving HS-DSCH Radio Link indicated by the *HS-PDSCH RL ID* IE.
- The DRNC shall include the *HARQ Memory Partitioning* IE in the [FDD – *HS-DSCH FDD Information Response* IE] [TDD – *HS-DSCH TDD Information Response* IE] in the RADIO LINK RECONFIGURATION READY message.
- The DRNC shall allocate an HS-DSCH-RNTI to the UE Context and include the *HS-DSCH-RNTI* IE in the RADIO LINK RECONFIGURATION READY message.
- The DRNS may use the *Traffic Class* IE for a specific HS-DSCH MAC-d flow to determine the transport bearer characteristics to apply between DRNC and Node B.
- If the RADIO LINK RECONFIGURATION PREPARE message includes the *MAC-hs Guaranteed Bit Rate* IE for a Priority Queue in the *HS-DSCH MAC-d Flows Information* IE in the *HS-DSCH Information* IE, then the DRNS shall use this information to optimise MAC-hs scheduling decisions for the related HSDPA Priority Queue.
- If the RADIO LINK RECONFIGURATION PREPARE message includes the *Discard Timer* IE for a Priority Queue in the *HS-DSCH MAC-d Flows Information* IE in the *HS-DSCH Information* IE, then the DRNS shall use this information to discard out-of-date MAC-hs SDUs from the related HSDPA Priority Queue.
- The DRNC shall include the *HS-DSCH Initial Capacity Allocation* IE in the [FDD – *HS-DSCH FDD Information Response* IE] [TDD – *HS-DSCH TDD Information Response* IE] in the RADIO LINK RECONFIGURATION READY message for every HS-DSCH MAC-d flow being established, if the DRNS allows the SRNC to start transmission of MAC-d PDUs before the DRNS has allocated capacity on user plane as described in [32].
- [FDD - If the RADIO LINK RECONFIGURATION PREPARE message includes the *HS-SCCH Power Offset* IE in the *HS-DSCH Information* IE, then the DRNS may use this value to determine the HS-SCCH power. The HS-SCCH Power Offset should be applied for any HS-SCCH transmission to this UE.]
- [FDD - The DRNC shall include the *Measurement Power Offset* IE in the *HS-DSCH Information Response* IE in the RADIO LINK RECONFIGURATION READY message.]
- [FDD - The DRNS shall allocate HS-SCCH codes corresponding to the HS-DSCH and the DRNC shall include the *HS-SCCH Specific Information Response* IE in the *HS-DSCH FDD Information Response* IE in the RADIO LINK RECONFIGURATION READY message.]

- [TDD - The DRNS shall allocate HS-SCCH parameters corresponding to the HS-DSCH and the DRNC shall include the [3.84Mcps TDD - *HS-SCCH Specific Information Response IE*] [1.28Mcps TDD - *HS-SCCH Specific Information Response LCR IE*] in the *HS-DSCH TDD Information Response IE* in the RADIO LINK RECONFIGURATION READY message.]
- [FDD - The DRNC shall include the *HS-PDSCH And HS-SCCH Scrambling Code IE* in the *HS-DSCH FDD Information Response IE* in the RADIO LINK RECONFIGURATION READY message.]

#### Intra-DRNS Serving HS-DSCH Radio Link Change:

If the RADIO LINK RECONFIGURATION PREPARE message includes the *HS-PDSCH RL ID IE*, this indicates the new Serving HS-DSCH Radio Link:

- The DRNS shall release the HS-PDSCH resources on the old Serving HS-DSCH Radio Link and setup the HS-PDSCH resources on the new Serving HS-DSCH Radio Link.
- The DRNC may include the *HARQ Memory Partitioning IE* in the [FDD – *HS-DSCH FDD Information Response IE*] [TDD – *HS-DSCH TDD Information Response IE*] in the RADIO LINK RECONFIGURATION READY message.
- The DRNC shall allocate a new HS-DSCH-RNTI to the UE Context and include the *HS-DSCH-RNTI IE* in the RADIO LINK RECONFIGURATION READY message.
- If a reset of the MAC-hs is not required the DRNS shall include the *MAC-hs Reset Indicator IE* in the RADIO LINK RECONFIGURATION READY message.
- [FDD - The DRNC shall include the *Measurement Power Offset IE* in the *HS-DSCH Information Response IE* in the RADIO LINK RECONFIGURATION READY message.]
- [FDD - The DRNS shall allocate HS-SCCH codes corresponding to the HS-DSCH and the DRNC shall include the *HS-SCCH Specific Information Response IE* in the *HS-DSCH FDD Information Response IE* in the RADIO LINK RECONFIGURATION READY message.]
- [TDD - The DRNS shall allocate HS-SCCH parameters corresponding to the HS-DSCH and the DRNC shall include the [3.84Mcps TDD - *HS-SCCH Specific Information Response IE*] [1.28Mcps TDD - *HS-SCCH Specific Information Response LCR IE*] in the *HS-DSCH TDD Information Response IE* in the RADIO LINK RECONFIGURATION READY message.]
- [TDD - The DRNC shall include the [3.84 Mcps TDD - *HS-PDSCH Timeslot Specific Information IE*] [1.28 Mcps TDD - *HS-PDSCH Timeslot Specific Information LCR IE*] in the *HS-DSCH Information Response IE* in the RADIO LINK SETUP RESPONSE message.]
- [FDD - The DRNC shall include the *HS-PDSCH And HS-SCCH Scrambling Code IE* in the *HS-DSCH FDD Information Response IE* in the RADIO LINK RECONFIGURATION READY message.]

#### HS-DSCH Modification:

If the RADIO LINK RECONFIGURATION PREPARE message includes the *HS-DSCH Information To Modify IE*, then:

- The DRNC shall include the *HS-DSCH Initial Capacity Allocation IE* for each HS-DSCH MAC-d flow being modified for which a new transport bearer was requested with the *Transport Bearer Request Indicator IE*, if the DRNS allows the SRNC to start transmission of MAC-d PDUs before the DRNS has allocated capacity on user plane as described in [32].
- If the RADIO LINK RECONFIGURATION PREPARE message includes the *Traffic Class IE* in the *HS-DSCH Information To Modify IE* for a specific HS-DSCH MAC-d flow, the DRNS may use this information to determine the transport bearer characteristics to apply between DRNC and Node B.
- If the RADIO LINK RECONFIGURATION PREPARE message includes the *MAC-hs Guaranteed Bit Rate IE* in the *HS-DSCH Information To Modify IE*, the DRNS shall use this information to optimise MAC-hs scheduling decisions for the related HSDPA Priority Queue.
- If the RADIO LINK RECONFIGURATION PREPARE message includes the *Discard Timer IE* in the *HS-DSCH Information IE*, then the DRNS shall use this information to discard out-of-date MAC-hs SDUs from the related HSDPA Priority Queue.

- If the RADIO LINK RECONFIGURATION PREPARE message includes the *MAC-hs Window Size IE* or *TI IE* in the *HS-DSCH Information To Modify IE*, then the DRNS shall use the indicated values in the new configuration for the related HSDPA Priority Queue.
- If the RADIO LINK RECONFIGURATION PREPARE message includes the *MAC-d PDU Size Index IE* in the *Modify Priority Queue* choice, the DRNS shall delete the previous list of MAC-d PDU Size Index values for the related HSDPA Priority Queue and use the MAC-d PDU Size Index values indicated in the *MAC-d PDU Size Index IE* in the new configuration.
- [FDD - If the RADIO LINK RECONFIGURATION PREPARE message includes the *CQI Feedback Cycle k IE*, the *CQI Repetition Factor IE*, the *ACK-NACK Repetition Factor IE*, the *ACK Power Offset IE*, the *NACK Power Offset IE* or the *CQI Power Offset IE* in the *HS-DSCH Information To Modify IE*, then the DRNS shall use the indicated CQI Feedback Cycle k value, the CQI Repetition Factor or the ACK-NACK Repetition Factor, ACK Power Offset, the NACK Power Offset or the CQI Power Offset in the new configuration.]
- [FDD - If the *HS-SCCH Power Offset IE* is included in the *HS-DSCH Information To Modify IE*, the DRNS may use this value to determine the HS-SCCH power. The HS-SCCH Power Offset should be applied for any HS-SCCH transmission to this UE.]
- [TDD – If the RADIO LINK RECONFIGURATION PREPARE message includes the *TDD ACK NACK Power Offset IE* in the *HS-DSCH Information To Modify IE*, the DRNS shall use the indicated power offset in the new configuration.]
- [FDD - If the *HS-DSCH Information To Modify IE* includes the *HS-SCCH Code Change Grant IE*, then the DRNS may modify the HS-SCCH codes corresponding to the HS-DSCH. The DRNC shall then report the codes which are used in the new configuration specified in the *HS-SCCH Specific Information Response IE* in the RADIO LINK RECONFIGURATION READY message.]
- [TDD - If the *HS-DSCH Information To Modify IE* includes the *HS-SCCH Code Change Grant IE*, then the DRNS may modify the HS-SCCH parameters corresponding to the HS-DSCH. The DRNC shall then report the values for the parameters which are used in the new configuration specified in the [3.84Mcps TDD - *HS-SCCH Specific Information Response IE*] [1.28Mcps TDD - *HS-SCCH Specific Information Response LCR IE*] in the RADIO LINK RECONFIGURATION READY message.]

#### HS-DSCH MAC-d Flow Addition/Deletion:

If the RADIO LINK RECONFIGURATION PREPARE message includes any *HS-DSCH MAC-d Flows To Add* or *HS-DSCH MAC-d Flows To Delete* IEs, then the DRNS shall use this information to add/delete the indicated HS-DSCH MAC-d flows on the Serving HS-DSCH Radio Link. When an HS-DSCH MAC-d flow is deleted, all its associated Priority Queues shall also be removed.

If the RADIO LINK RECONFIGURATION PREPARE message includes an *HS-DSCH MAC-d Flows To Delete IE* requesting the deletion of all remaining HS-DSCH MAC-d flows for the UE Context, then the DRNC shall delete the HS-DSCH configuration from the UE Context and release the HS-PDSCH resources.

If the RADIO LINK RECONFIGURATION PREPARE message includes the *HS-DSCH MAC-d Flows To Add IE*, then:

- The DRNS may use the *Traffic Class IE* for a specific HS-DSCH MAC-d flow to determine the transport bearer characteristics to apply between DRNC and Node B.
- The DRNC shall include the *HS-DSH Initial Capacity Allocation IE* in the RADIO LINK RECONFIGURATION READY message for every HS-DSCH MAC-d flow being added, if the DRNS allows the SRNC to start transmission of MAC-d PDUs before the DRNS has allocated capacity on user plane as described in [32].
- If the RADIO LINK RECONFIGURATION PREPARE message includes the *MAC-hs Guaranteed Bit Rate IE* in the *HS-DSCH MAC-d Flows To Add IE*, the DRNS shall use this information to optimise MAC-hs scheduling decisions for the related HSDPA Priority Queue.
- If the RADIO LINK RECONFIGURATION PREPARE message includes the *Discard Timer IE* in the *HS-DSCH Information IE*, then the DRNS shall use this information to discard out-of-date MAC-hs SDUs from the related HSDPA Priority Queue.

- The DRNC may include the *HARQ Memory Partitioning* IE in the RADIO LINK RECONFIGURATION READY message.

### **E-DCH Setup:**

If the *E-DCH FDD Information* IE is present in the RADIO LINK RECONFIGURATION PREPARE message and the *RL Information* IE contains the *RL specific E-DCH Information* IE for one Radio Link then:

- The DRNS shall setup the requested E-DCH resources on the Radio Link indicated by the *RL ID* IE in the *RL Information* IE.
- The RADIO LINK RECONFIGURATION PREPARE message shall contain in the *RL Information* IE for every *RL* the *E-DCH RL Indication* IE indication whether this *RL* has configured E-DCH resources.
- If the RADIO LINK RECONFIGURATION PREPARE message includes the *MAC-e Guaranteed Bit Rate* IE for an E-DCH MAC-d flow in the *E-DCH FDD Information* IE, then the DRNS shall use this information to optimise MAC-e scheduling decisions.
- If the RADIO LINK RECONFIGURATION PREPARE message includes the *Maximum Number of Retransmissions for E-DCH* IE for a E-DCH MAC-d flow in the *E-DCH FDD Information* IE, then the DRNS shall use this information to report if the maximum number of retransmissions has been exceeded.
- The DRNS may use the *Traffic Class* IE for a specific E-DCH MAC-d flow to determine the transport bearer characteristics to apply between DRNC and Node B.
- If the *TNL QoS* IE is included for a E-DCH MAC-d flow and if ALCAP is not used, the *TNL QoS* IE may be used by the DRNS to determine the transport bearer characteristics to apply in the uplink for the related MAC-d flow.
- The DRNC shall include the *E-AGCH and E-RGCH and E-HICH FDD Scrambling Code* IE and the *E-RGCH* and *E-HICH* Channelisation Code IE and the corresponding Sequence number for *E-RGCH* IE and the Sequence number for *E-HICH* IE in the *E-DCH FDD DL Control Channel Information* IE in the RADIO LINK RECONFIGURATION READY message.

If the RADIO LINK RECONFIGURATION PREPARE message contains the *Serving E-DCH RL ID* IE the DRNC shall allocate an E-RNTI and include this E-RNTI and the Channelisation Code of the corresponding *E-AGCH* in the *E-DCH FDD DL Control Channel Information* IE in the *RL Information* IE for the indicated *RL* in the RADIO LINK RECONFIGURATION READY message.]

### **E-DCH Modification:**

If the RADIO LINK RECONFIGURATION PREPARE message includes the *E-DCH FDD Information To Modify* IE, then:

- If the *E-DCH MAC-d Flow Information* IE includes the *Payload CRC Presence Indicator* IE the DRNS shall apply the payload indicator in the Uplink of the user plane for the E-DCH in the new configuration.
- If the *E-DCH FDD Information To Modify* IE contains a *E-DCH MAC-d Flow Information* IE which includes the *Allocation/Retention Priority* IE, the DRNS shall apply the new Allocation/Retention Priority to this E-DCH in the new configuration according to Annex A.
- If the *TNL QoS* IE is included for a E-DCH MAC-d flow and if ALCAP is not used, the *TNL QoS* IE may be used by the DRNS to determine the transport bearer characteristics to apply in the uplink for the related MAC-d flow.
  - If the RADIO LINK RECONFIGURATION PREPARE message includes the *Data Description Indicator* IE, the DRNC shall use the DDI values indicated in the *Data Description Indicator* IE in the new configuration.
  - If the RADIO LINK RECONFIGURATION PREPARE message includes the *MAC-e Guaranteed Bit Rate* IE in the *E-DCH FDD Information To Modify* IE, the DRNS shall use this information to optimise MAC-e scheduling decisions.
  - If the RADIO LINK RECONFIGURATION PREPARE message includes the *Maximum Number of Retransmissions for E-DCH* IE for a E-DCH MAC-d flow in the *E-DCH FDD Information To Modify* IE, then the DRNS shall use this information to report if the maximum number of retransmissions has been exceeded.

- The DRNC shall include the *E-AGCH and E-RGCH and E-HICH FDD Scrambling Code IE* and the *E-RGCH and E-HICH Channelisation Code IE* and the corresponding *Sequence number IE* in the *E-DCH FDD DL Control Channel Information IE* in the RADIO LINK RECONFIGURATION READY message.

If the RL Information IE contains the *Serving E-DCH RL ID IE* for one RL then the DRNC shall allocate an E-RNTI and include this E-RNTI and the Channelisation Code of the corresponding E-AGCH in the *E-DCH FDD DL Control Channel Information IE* in the *RL Information IE* for the indicated RL in the RADIO LINK RECONFIGURATION READY message.]

#### **E-DCH MAC-d Flow Addition/Deletion:**

If the RADIO LINK RECONFIGURATION PREPARE message includes any *E-DCH MAC-d Flows To Add* or *E-DCH MAC-d Flows To Delete* IEs in the *RL Information IE*, then the DRNS shall use this information to add/delete the indicated E-DCH MAC-d flows on the Serving E-DCH Radio Link. When an E-DCH MAC-d flow is deleted, all its associated Priority Queues shall also be removed.

If the RADIO LINK RECONFIGURATION PREPARE message includes an *E-DCH MAC-d Flows To Delete IE* requesting the deletion of all remaining E-DCH MAC-d flows for the UE Context, then the DRNC shall delete the E-DCH configuration from the UE Context and release the E-DCH resources.

If the RADIO LINK RECONFIGURATION PREPARE message includes the *E-DCH MAC-d Flows To Add IE*, then:

- The DRNS may use the *Traffic Class IE* for a specific E-DCH MAC-d flow to determine the transport bearer characteristics to apply between DRNC and Node B.
- If the RADIO LINK RECONFIGURATION PREPARE message includes the *MAC-e Guaranteed Bit Rate IE* in the *E-DCH MAC-d Flows To Add IE*, the DRNS shall use this information to optimise MAC-e scheduling decisions.

#### **[1.28Mcps TDD - Uplink Synchronisation Parameters LCR]:**

[1.28Mcps TDD -If the *Uplink Synchronisation Parameters LCR IE* is present, the DRNC shall use the indicated values of *Uplink synchronisation stepsize IE* and *Uplink synchronisation frequency IE* when evaluating the timing of the UL synchronisation.]

#### **[1.28Mcps TDD - Uplink Timing Advance Control LCR]:**

[1.28Mcps TDD - The DRNC shall include the *Uplink Timing Advance Control LCR IE* in the RADIO LINK RECONFIGURATION READY message, if the Uplink Timing Advance Control parameters have been changed.]

#### **[TDD] DSCH RNTI Addition/Deletion**

[TDD - If the RADIO LINK RECONFIGURATION PREPARE message includes the *PDSCH RL ID IE*, then the DRNS shall use it as the new RL identifier for PDSCH and PUSCH.]

- [TDD - If the indicated PDSCH RL ID is in the DRNS and there was no DSCH-RNTI allocated to the UE Context, the DRNC shall allocate a DSCH-RNTI to the UE Context and include the DSCH-RNTI IE in the RADIO LINK RECONFIGURATION READY message.]
- [TDD - If the indicated PDSCH RL ID is in the DRNS and there was a DSCH-RNTI allocated to the UE Context, the DRNC shall allocate a new DSCH-RNTI to the UE Context, release the old DSCH-RNTI and include the DSCH-RNTI IE in the RADIO LINK RECONFIGURATION READY message.]
- [TDD - If the indicated PDSCH RL ID is not in the DRNS and there was a DSCH-RNTI allocated to the UE Context, the DRNC shall release this DSCH-RNTI.]

[TDD - If the RADIO LINK RECONFIGURATION PREPARE message includes a *DSCHs to Delete IE* and/or a *USCHs to Delete IE* which results in the deletion of all DSCH and USCH resources for the UE Context, then the DRNC shall release the DSCH-RNTI allocated to the UE Context, if there was one.]

#### **[FDD – Phase Reference Handling]:**

[FDD – If the RADIO LINK RECONFIGURATION PREPARE message includes the *UE Support Of Dedicated Pilots For Channel Estimation IE*, the DRNC shall assume that dedicated pilots may be used for channel estimation for DCH or DSCH.]



[FDD – If the RADIO LINK RECONFIGURATION PREPARE message includes the *UE Support Of Dedicated Pilots For Channel Estimation Of HS-DSCH* IE, the DRNC shall assume that dedicated pilots may be used for channel estimation for HS-DSCH.]

[FDD – If Primary CPICH usage for channel estimation information has been reconfigured, the DRNC shall include the *Primary CPICH Usage For Channel Estimation* IE in the RADIO LINK RECONFIGURATION READY message.]

[FDD – If Secondary CPICH information for channel estimation has been reconfigured, the DRNC shall include the *Secondary CPICH Information Change* IE in the RADIO LINK RECONFIGURATION READY message.]

[FDD – If the RADIO LINK RECONFIGURATION PREPARE message includes *Phase Reference Update Indicator* IE, DRNC shall modify the channel estimation information according to [10] subclause 4.3.2.1 and set the value(s) in *Primary CPICH Usage For Channel Estimation* IE and/or *Secondary CPICH Information Change* IE in the RADIO LINK RECONFIGURATION READY message accordingly.]

## General

If the requested modifications are allowed by the DRNC and the DRNC has successfully reserved the required resources for the new configuration of the Radio Link(s), it shall respond to the SRNC with the RADIO LINK RECONFIGURATION READY message. When this procedure has been completed successfully there exists a Prepared Reconfiguration, as defined in subclause 3.1.

If the RADIO LINK RECONFIGURATION PREPARE message includes the *Transport Layer Address* IE and *Binding ID* IE in the *DSCHs To Modify* IE, *DSCHs To Add* IE, [TDD - *USCHs To Modify* IE, *USCHs To Add* IE], *HS-DSCH Information* IE, *HS-DSCH Information To Modify* IE, *HS-DSCH MAC-d Flows To Add* IE, [E-DCH MAC-d Flows to Add](#), or in the *RL Specific DCH Information* IEs, the DRNC may use the transport layer address and the binding identifier received from the SRNC when establishing a transport bearer for any Transport Channel, ~~or~~ HS-DSCH MAC-d flow [or E-DCH MAC-d flow](#) being added, or any Transport Channel, ~~or~~ HS-DSCH MAC-d flow [or E-DCH MAC-d flow](#) being modified for which a new transport bearer was requested with the *Transport Bearer Request Indicator* IE.

The DRNC shall include in the RADIO LINK RECONFIGURATION READY message the *Transport Layer Address* IE and the *Binding ID* IE for any Transport Channel, ~~or~~ HS-DSCH MAC-d flow [or E-DCH MAC-d flow](#) being added, or any Transport Channel, ~~or~~ HS-DSCH MAC-d flow [or E-DCH MAC-d flow](#) being modified for which a new transport bearer was requested with the *Transport Bearer Request Indicator* IE. In the case of a set of co-ordinated DCHs requiring a new transport bearer on the Iur interface, the *Transport Layer Address* IE and the *Binding ID* IE in the *DCH Information Response* IE shall be included for only one of the DCHs in the set of co-ordinated DCHs.

In the case of a Radio Link being combined with another Radio Link within the DRNS, the *Transport Layer Address* IE and the *Binding ID* IE in the *DCH Information Response* IE shall be included for only one of the combined Radio Links.

Any allowed rate for the uplink of a modified DCH provided for the old configuration will not be valid for the new configuration. If the DRNS needs to limit the user rate in the uplink of a DCH due to congestion caused by the UL UTRAN Dynamic Resources (see subclause 9.2.1.79) in the new configuration for a Radio Link, the DRNC shall include in the RADIO LINK RECONFIGURATION READY message the *Allowed UL Rate* IE in the *DCH Information Response* IE for this Radio Link.

Any allowed rate for the downlink of a modified DCH provided for the old configuration will not be valid for the new configuration. If the DRNS needs to limit the user rate in the downlink of a DCH due to congestion caused by the DL UTRAN Dynamic Resources (see subclause 9.2.1.79) in the new configuration for a Radio Link, the DRNC shall include in the RADIO LINK RECONFIGURATION READY message the *Allowed DL Rate* IE in the *DCH Information Response* IE for this Radio Link.

The DRNS decides the maximum and minimum SIR for the uplink of the Radio Link(s) and the DRNC shall include in the RADIO LINK RECONFIGURATION READY message the *Maximum Uplink SIR* IE and *Minimum Uplink SIR* IE for each Radio Link when these values are changed.

[FDD - If the DL TX power upper or lower limit has been re-configured, the DRNC shall include in the RADIO LINK RECONFIGURATION READY message the *Maximum DL TX Power* IE and *Minimum DL TX Power* IE respectively. The DRNS shall not transmit with a higher power than indicated by the *Maximum DL TX Power* IE or lower than indicated by the *Minimum DL TX Power* IE on any DL DPCH of the RL -except during compressed mode, when the  $\delta P_{curr}$ , as described in ref.[10] subclause 5.2.1.3, shall be added to the maximum DL power for the associated compressed frame.]

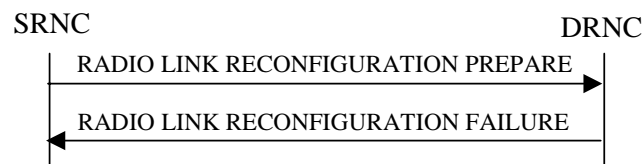
[3.84 Mcps TDD - If the DL TX power upper or lower limit has been re-configured, the DRNC shall include the new value(s) in the *Maximum DL TX Power IE* and *Minimum DL TX Power IE* in the RADIO LINK RECONFIGURATION READY message. If the maximum or minimum power needs to be different for particular DCH type CCTrCHs, the DRNC shall include the new value(s) for that CCTrCH in the *CCTrCH Maximum DL TX Power IE* and *CCTrCH Minimum DL TX Power*. The DRNS shall not transmit with a higher power than indicated by the appropriate *Maximum DL TX Power IE/CCTrCH Maximum DL TX Power IE* or lower than indicated by the appropriate *Minimum DL TX Power IE/CCTrCH Minimum DL TX Power IE* on any DL DPCH within each CCTrCH of the RL.]

[1.28 Mcps TDD - If the DL TX power upper or lower limit has been re-configured, the DRNC shall include the new value(s) in the *Maximum DL TX Power IE* and *Minimum DL TX Power IE* in the RADIO LINK RECONFIGURATION READY message. If the maximum or minimum power needs to be different for particular timeslots within a DCH type CCTrCH, the DRNC shall include the new value(s) for that timeslot in the *Maximum DL TX Power IE* and *Minimum DL TX Power* within the *DL Timeslot Information LCR IE*. The DRNS shall not transmit with a higher power than indicated by the appropriate *Maximum DL TX Power IE* or lower than indicated by the appropriate *Minimum DL TX Power IE* on any DL DPCH within each timeslot of the RL.]

[TDD - If the [3.84Mcps TDD - *DL Time Slot ISCP Info IE*][1.28Mcps TDD - *DL Time Slot ISCP Info LCR IE*] is present, the DRNS should use the indicated values when deciding the Initial DL TX Power.]

[TDD - If the *Primary CCPCH RSCP Delta IE* is included, the DRNS shall assume that the reported value for Primary CCPCH RSCP is in the negative range as per [24], and the value is equal to the *Primary CCPCH RSCP Delta IE*. If the *Primary CCPCH RSCP Delta IE* is not included and the *Primary CCPCH RSCP IE* is included, the DRNS shall assume that the reported value is in the non-negative range as per [24], and the value is equal to the *Primary CCPCH RSCP IE*. The DRNS shall use the indicated values when deciding the Initial DL TX Power.]

### 8.3.4.3 Unsuccessful Operation



**Figure 11: Synchronised Radio Link Reconfiguration Preparation procedure, Unsuccessful Operation**

If the DRNS cannot reserve the necessary resources for all the new DCHs of a set of co-ordinated DCHs requested to be added, it shall reject the Synchronised Radio Link Reconfiguration Preparation procedure as having failed.

If the requested Synchronised Radio Link Reconfiguration Preparation procedure fails for one or more RLs, the DRNC shall send the RADIO LINK RECONFIGURATION FAILURE message to the SRNC, indicating the reason for failure for each failed radio link in a *Cause IE*.

Typical cause values are:

#### Radio Network Layer Causes:

- UL Scrambling Code Already in Use;
- DL Radio Resources not Available;
- UL Radio Resources not Available;
- Requested Configuration not Supported;
- Number of DL Codes not Supported;
- Number of UL Codes not Supported;
- Dedicated Transport Channel Type not Supported;
- DL Shared Channel Type not Supported;
- [TDD - UL Shared Channel Type not Supported];

- [FDD - UL Spreading Factor not Supported];
- [FDD - DL Spreading Factor not Supported];
- CM not Supported;
- RL Timing Adjustment not Supported.

#### Miscellaneous Causes:

- Control Processing Overload;
- Not enough User Plane Processing Resources.

### 8.3.4.4 Abnormal Conditions

If only a subset of all the DCHs belonging to a set of co-ordinated DCHs is requested to be deleted, the DRNS shall reject the Synchronised Radio Link Reconfiguration Preparation procedure as having failed and shall send the RADIO LINK RECONFIGURATION FAILURE message to the SRNC.

If more than one DCH of a set of co-ordinated DCHs has the *QE-Selector* IE set to "selected" [TDD - or no DCH of a set of co-ordinated DCHs has the *QE-Selector* IE set to "selected"] the DRNS shall reject the Synchronised Radio Link Reconfiguration Preparation procedure and the DRNC shall respond with a RADIO LINK RECONFIGURATION FAILURE message.

[FDD - If the *RL Information* IE includes the *SSDT Indication* IE set to "SSDT Active in the UE" and SSDT is not active in the current configuration, the DRNS shall reject the Synchronised Radio Link Reconfiguration Preparation procedure if the *UL DPCCH Information* IE does not include the *SSDT Cell Identity Length* IE. The DRNC shall then respond with a RADIO LINK RECONFIGURATION FAILURE message.]

[FDD - If the *DSCHs To Add* IE includes the *Enhanced DSCH PC* IE and the *DSCH To Modify* IE include the *Enhanced DSCH PC Indicator* IE set to "Enhanced DSCH PC not Active in the UE", then the DRNS shall deactivate enhanced DSCH power control in the new configuration.]

[FDD - If both the *DSCHs To Add* IE and the *DSCH To Modify* IE include *Enhanced DSCH PC* IE, then the DRNS shall ignore the *Enhanced DSCH PC* IE in the *DSCH To Add* IE.]

If the RADIO LINK RECONFIGURATION PREPARE message includes a *DCHs To Modify* IE or *DCHs To Add* IE with multiple *DCH Specific Info* IEs, and if the DCHs in the *DCHs To Modify* IE or *DCHs To Add* IE do not have the same *Transmission Time Interval* IE in the *Semi-static Transport Format Information* IE, then the DRNC shall reject the procedure using the RADIO LINK RECONFIGURATION FAILURE message.

[FDD - If the *RL Information* IE includes the *DL Reference Power* IE, but the power balancing is not active in the indicated RL(s), the DRNS shall reject the Synchronised Radio Link Reconfiguration Preparation procedure as having failed and the DRNC shall respond with the RADIO LINK RECONFIGURATION FAILURE message with the cause value "Power Balancing status not compatible".]

[FDD - If the power balancing is active with the Power Balancing Adjustment Type of the UE Context set to "Common" in the existing RL(s) but the RADIO LINK RECONFIGURATION PREPARE message includes more than one *DL Reference Power* IE, the DRNS shall reject the Synchronised Radio Link Reconfiguration Preparation procedure as having failed and the DRNC shall respond with the RADIO LINK RECONFIGURATION FAILURE message with the cause value "Power Balancing status not compatible".]

[FDD - If the RADIO LINK RECONFIGURATION PREPARE message does not include the *Split Type* IE but includes *TFCI Signalling Mode* IE set to "Split", then the DRNC shall reject the procedure using the RADIO LINK RECONFIGURATION FAILURE message.]

[FDD - If the RADIO LINK RECONFIGURATION PREPARE message does not include the *Length of TFCI2* IE but the *Split type* IE is set to "Logical", then the DRNC shall reject the procedure using the RADIO LINK RECONFIGURATION FAILURE message.]

[FDD - If the RADIO LINK RECONFIGURATION PREPARE message includes the *Split Type* IE set to the value "Hard" and the *Length Of TFCI2* IE set to the value "1", "2", "5", "8", "9" or "10", then the DRNC shall reject the procedure using the RADIO LINK RECONFIGURATION FAILURE message.]

[FDD - If the RADIO LINK RECONFIGURATION PREPARE message does not include the *Split Type* IE but includes the *Length of TFCI2* IE, then the DRNC shall reject the procedure using the RADIO LINK RECONFIGURATION FAILURE message.]

If the RADIO LINK RECONFIGURATION PREPARE message contains the *Transport Layer Address* IE or the *Binding ID* IE when establishing a transport bearer for any Transport Channel or HS-DSCH MAC-d flow being added, or any Transport Channel or HS-DSCH MAC-d flow being modified for which a new transport bearer was requested with the *Transport Bearer Request Indicator* IE., and not both are present for a transport bearer intended to be established, the DRNC shall reject the Synchronised Radio Link Reconfiguration Preparation procedure and the DRNC shall respond with a RADIO LINK RECONFIGURATION FAILURE message.

If the RADIO LINK RECONFIGURATION PREPARE message contains any of the *HS-DSCH Information To Modify* IE, *HS-DSCH MAC-d Flows To Add* IE or *HS-DSCH MAC-d Flows To Delete* IE in addition to the *HS-DSCH Information* IE, the DRNC shall reject the procedure using the RADIO LINK RECONFIGURATION FAILURE message.

If the RADIO LINK RECONFIGURATION PREPARE message contains any of the *HS-DSCH Information To Modify* IE, *HS-DSCH MAC-d Flows To Add* IE, *HS-DSCH MAC-d Flows To Delete* IE or *HS-PDSCH RL ID* IE and the Serving HS-DSCH Radio Link is not in the DRNS, the DRNC shall reject the procedure using the RADIO LINK RECONFIGURATION FAILURE message.

If the RADIO LINK RECONFIGURATION PREPARE message includes the *HS-DSCH Information* IE and does not include the *HS-PDSCH RL-ID* IE, the DRNC shall reject the procedure using the RADIO LINK RECONFIGURATION FAILURE message.

If the RADIO LINK RECONFIGURATION PREPARE message includes the *HS-DSCH Information To Modify* IE deleting the last remaining Priority Queue of an HS-DSCH MAC-d Flow, the DRNC shall reject the procedure using the RADIO LINK RECONFIGURATION FAILURE message.

If the RADIO LINK RECONFIGURATION PREPARE message includes the *HS-PDSCH RL-ID* IE indicating a Radio Link not existing in the UE Context, the DRNC shall reject the procedure using the RADIO LINK RECONFIGURATION FAILURE message.

If the RADIO LINK RECONFIGURATION PREPARE message contains any of the *HS-DSCH Information* IE, *HS-DSCH Information To Modify* IE, or *HS-DSCH MAC-d Flows To Add* IE and if in the new configuration the Priority Queues associated with the same *HS-DSCH MAC-d Flow ID* IE have the same *Scheduling Priority Indicator* IE value, the DRNC shall reject the procedure using the RADIO LINK RECONFIGURATION FAILURE message.

## 8.3.5 Synchronised Radio Link Reconfiguration Commit

### 8.3.5.1 General

This procedure is used to order the DRNS to switch to the new configuration for the Radio Link(s) within the DRNS, previously prepared by the Synchronised Radio Link Reconfiguration Preparation procedure.

This procedure shall use the signalling bearer connection for the relevant UE Context.

### 8.3.5.2 Successful Operation



**Figure 12: Synchronised Radio Link Reconfiguration Commit procedure, Successful Operation**

The DRNS shall switch to the new configuration previously prepared by the Synchronised Radio Link Reconfiguration Preparation procedure at the next coming CFN with a value equal to the value requested by the SRNC in the *CFN* IE (see ref.[17] subclause 9.4) when receiving the RADIO LINK RECONFIGURATION COMMIT message from the SRNC.

[FDD - If the *Active Pattern Sequence Information* IE is included in the RADIO LINK RECONFIGURATION COMMIT message, the *CM Configuration Change CFN* IE in the *Active Pattern Sequence Information* IE shall be ignored by the DRNS.]

When this procedure has been completed the Prepared Reconfiguration does not exist any more, see subclause 3.1.

In the case of a transport channel modification for which a new transport bearer was requested and established, the switch to the new transport bearer shall also take place at the indicated CFN. The detailed frame protocol handling during transport bearer replacement is described in [4], subclause 5.10.1 and in [32], subclause 5.3.1.

[FDD - If the RADIO LINK RECONFIGURATION COMMIT includes the *Active Pattern Sequence Information* IE, the DRNS shall deactivate all the ongoing Transmission Gap Pattern Sequences at the *CFN* IE. From that moment on all Transmission Gap Pattern Sequences included in *Transmission Gap Pattern Sequence Status* IE repetitions shall be started when the indicated *TGCFN* IE elapses. The *CFN* IE and *TGCFN* IE for each sequence refer to the next coming CFN with that value. If the values of the *CFN* IE and the *TGCFN* IE are equal, the concerned Transmission Gap Pattern Sequence shall be started immediately at the CFN with a value equal to the value received in the *CFN* IE.]

### 8.3.5.3 Abnormal Conditions

If a new transport bearer is required for the new configuration and it is not available at the requested CFN, the DRNS shall initiate the Radio Link Failure procedure.

## 8.3.6 Synchronised Radio Link Reconfiguration Cancellation

### 8.3.6.1 General

This procedure is used to order the DRNS to release the new configuration for the Radio Link(s) within the DRNS, previously prepared by the Synchronised Radio Link Reconfiguration Preparation procedure.

This procedure shall use the signalling bearer connection for the relevant UE Context.

### 8.3.6.2 Successful Operation



**Figure 13: Synchronised Radio Link Reconfiguration Cancellation procedure, Successful Operation**

Upon receipt of the RADIO LINK RECONFIGURATION CANCEL message from the SRNC, the DRNS shall release the new configuration ([FDD - including the new Transmission Gap Pattern Sequence parameters (if existing)]) previously prepared by the Synchronised RL Reconfiguration Preparation procedure and continue using the old configuration. When this procedure has been completed the Prepared Reconfiguration does not exist any more, see subclause 3.1.

### 8.3.6.3 Abnormal Conditions

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## 8.3.7 Unsynchronised Radio Link Reconfiguration

### 8.3.7.1 General

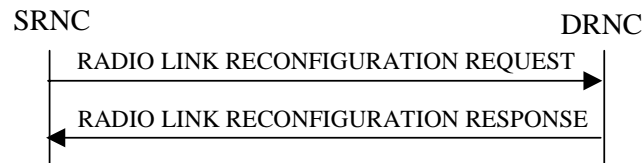
The Unsynchronised Radio Link Reconfiguration procedure is used to reconfigure Radio Link(s) related to one UE-UTRAN connection within a DRNS.

The procedure is used when there is no need to synchronise the time of the switching from the old to the new radio link configuration in the cells used by the UE-UTRAN connection within the DRNS.

This procedure shall use the signalling bearer connection for the relevant UE Context.

The Unsynchronised Radio Link Reconfiguration procedure shall not be initiated if a Prepared Reconfiguration exists, as defined in subclause 3.1.

### 8.3.7.2 Successful Operation



**Figure 14: Unsynchronised Radio Link Reconfiguration procedure, Successful Operation**

The Unsynchronised Radio Link Reconfiguration procedure is initiated by the SRNC by sending the RADIO LINK RECONFIGURATION REQUEST message to the DRNC.

Upon receipt, the DRNS shall modify the configuration of the Radio Link(s) according to the parameters given in the message. Unless specified below, the meaning of parameters is specified in other specifications.

If the RADIO LINK RECONFIGURATION REQUEST message includes the *Allowed Queuing Time* IE the DRNS may queue the request the time corresponding to the value of the *Allowed Queuing Time* IE before starting to execute the request.

The DRNS shall prioritise resource allocation for the RL to be modified according to Annex A.

#### **DCH Modification:**

If the RADIO LINK RECONFIGURATION REQUEST message includes any *DCHs To Modify* IEs, then the DRNS shall treat them as follows:

- If the *DCHs To Modify* IE includes multiple *DCH Specific Info* IEs, then the DRNS shall treat the DCHs as a set of co-ordinated DCHs. The DRNS shall include these DCHs in the new configuration only if it can include all of them in the new configuration.
- If the *DCHs To Modify* IE includes the *UL FP Mode* IE for a DCH or a set of co-ordinated DCHs to be modified, the DRNS shall apply the new FP Mode in the Uplink of the user plane for the DCH or the set of co-ordinated DCHs in the new configuration.
- If the *DCHs To Modify* IE includes the *ToAWS* IE for a DCH or a set of co-ordinated DCHs to be modified, the DRNS shall apply the new ToAWS in the user plane for the DCH or the set of co-ordinated DCHs in the new configuration.
- If the *DCHs To Modify* IE includes the *ToAWE* IE for a DCH or a set of co-ordinated DCHs to be modified, the DRNS shall apply the new ToAWE in the user plane for the DCH or the set of co-ordinated DCHs in the new configuration.
- If the *DCHs To Modify* IE contains a *DCH Specific Info* IE which includes a *Transport Format Set* IE for the UL of a DCH to be modified, the DRNS shall apply the new Transport Format Set in the Uplink of this DCH in the new configuration.
- If the *DCHs To Modify* IE contains a *DCH Specific Info* IE which includes a *Transport Format Set* IE for the DL of a DCH to be modified, the DRNS shall apply the new Transport Format Set in the Downlink of this DCH in the new configuration.
- If the *DCHs To Modify* IE contains a *DCH Specific Info* IE which includes the *Frame Handling Priority* IE, the DRNS should store this information for this DCH in the new configuration. The received Frame Handling Priority should be used when prioritising between different frames in the downlink on the radio interface in congestion situations within the DRNS once the new configuration has been activated.
- If the *DCH Specific Info* IE includes the *Traffic Class* IE, the DRNC may use this information to determine the transport bearer characteristics to apply between DRNC and Node B for the related DCH or set of co-ordinated

DCHs. The DRNC should ignore the *Traffic Class* IE if the *TrCH Source Statistics Descriptor* IE indicates the value "RRC".

- If the *TNL QoS* IE is included for a DCH or a set of co-ordinated DCHs and if ALCAP is not used, the DRNS may use this information to determine the transport bearer characteristics to apply for the uplink for the related DCH or set of co-ordinated DCHs.
- If the *DCHs To Modify* IE contains a *DCH Specific Info* IE which includes the *Allocation/Retention Priority* IE, the DRNS shall apply the new Allocation/Retention Priority to this DCH in the new configuration according to Annex A.
- [FDD - If the *DRAC Control* IE is present and set to "requested" in *DCHs To Modify* IE for at least one DCH, and if the DRNS supports the DRAC, the DRNC shall include in the RADIO LINK RECONFIGURATION RESPONSE message the *Secondary CCPCH Info* IE for the FACH in which the DRAC information is sent, for each Radio Link supported by a cell in which DRAC is active.]
- [TDD - If the *DCHs To Modify* IE contains a *DCH Specific Info* IE which includes the *CCTrCH ID* IE for the UL, the DRNS shall map the DCH onto the referenced UL CCTrCH in the new configuration.]
- [TDD - If the *DCHs To Modify* IE contains a *DCH Specific Info* IE which includes the *CCTrCH ID* IE for the DL, the DRNS shall map the DCH onto the referenced DL CCTrCH in the new configuration.]
- If the *DCHs To Modify* IE contains a *DCH Specific Info* IE which includes the *Guaranteed Rate Information* IE, the DRNS shall treat the included IEs according to the following:
  - If the *Guaranteed Rate Information* IE includes the *Guaranteed UL Rate* IE, the DRNS shall apply the new Guaranteed Rate in the uplink of this DCH in the new configuration. The DRNS may decide to request the SRNC to limit the user rate in the uplink of the DCH at any point in time after activating the new configuration. The DRNS may request the SRNC to reduce the user rate of the uplink of the DCH below the guaranteed bit rate, however, whenever possible the DRNS should request the SRNC to reduce the user rate between the maximum bit rate and the guaranteed bit rate.
  - If the *Guaranteed Rate Information* IE includes the *Guaranteed DL Rate* IE, the DRNS shall apply the new Guaranteed Rate in the downlink of this DCH in the new configuration. The DRNS may decide to request the SRNC to limit the user in the downlink of the DCH at any point in time after activating the new configuration. The DRNS may request the SRNC to reduce the user rate of the downlink of the DCH below the guaranteed bit rate, however, whenever possible the DRNS should request the SRNC to reduce the user rate between the maximum bit rate and the guaranteed bit rate.

#### **DCH Addition:**

If the RADIO LINK RECONFIGURATION REQUEST message includes any *DCHs To Add* IEs, then the DRNS shall treat them each as follows:

- The DRNS shall reserve necessary resources for the new configuration of the Radio Link(s) according to the parameters given in the message and include these DCH in the new configuration.
- If the *DCHs To Add* IE includes multiple *DCH Specific Info* IEs then the DRNS shall treat the DCHs in the *DCHs To Add* IE as a set of co-ordinated DCHs. The DRNS shall include these DCHs in the new configuration only if all of them can be in the new configuration.
- If the *DCH Specific Info* IE includes the *Unidirectional DCH Indicator* IE set to "Uplink DCH only", the DRNS shall ignore the *Transport Format Set* IE for the downlink for this DCH. As a consequence this DCH is not included as a part of the downlink CCTrCH.
- [TDD - If the *DCH Specific Info* IE includes the *Unidirectional DCH Indicator* IE set to "Downlink DCH only", the DRNS shall ignore the *Transport Format Set* IE for the uplink for this DCH. As a consequence this DCH is not included as a part of the uplink CCTrCH.]
- [FDD - For each DCH which does not belong to a set of co-ordinated DCHs, and which includes a *QE-Selector* IE set to "selected", the DRNS shall use the Transport channel BER from that DCH for the QE in the UL data frames. If no Transport channel BER is available for the selected DCH, the DRNS shall use the Physical channel BER for the QE, ref. [4]. If the *QE-Selector* IE is set to "non-selected", the DRNS shall use the Physical channel BER for the QE in the UL data frames, ref. [4].]

- For a set of co-ordinated DCHs, the DRNS shall use the Transport channel BER from the DCH with the *QE-Selector* IE set to "selected" for the QE in the UL data frames, ref. [4]. [FDD - If no Transport channel BER is available for the selected DCH, the DRNS shall use the Physical channel BER for the QE, ref. [4]. If all DCHs have the *QE-Selector* IE set to "non-selected", the DRNS shall use the Physical channel BER for the QE, ref. [4].] [TDD - If no Transport channel BER is available for the selected DCH, the DRNS shall use 0 for the QE, ref. [4].]
- The DRNS should store the *Frame Handling Priority* IE received for a DCH to be added in the new configuration. The received Frame Handling Priority should be used when prioritising between different frames in the downlink on the Uu interface in congestion situations within the DRNS once the new configuration has been activated.
- The *Traffic Class* IE may be used to determine the transport bearer characteristics to apply between DRNC and Node B for the related DCH or set of co-ordinated DCHs. The DRNC should ignore the *Traffic Class* IE if the *TrCH Source Statistics Descriptor* IE indicates the value "RRC".
- If the *TNL QoS* IE is included for a DCH or a set of co-ordinated DCHs and if ALCAP is not used, the DRNS may use this information to determine the transport bearer characteristics to apply for the uplink for the related DCH or set of co-ordinated DCHs.
- The DRNS shall use the included *UL FP Mode* IE for a DCH or a set of co-ordinated DCHs to be added as the new FP Mode in the Uplink of the user plane for the DCH or the set of co-ordinated DCHs in the new configuration.
- The DRNS shall use the included *ToAWS* IE for a DCH or a set of co-ordinated DCHs to be added as the new Time of Arrival Window Startpoint in the user plane for the DCH or the set of co-ordinated DCHs in the new configuration.
- The DRNS shall use the included *ToAWE* IE for a DCH or a set of co-ordinated DCHs to be added as the new Time of Arrival Window Endpoint in the user plane for the DCH or the set of co-ordinated DCHs in the new configuration.
- [FDD - If the *DRAC Control* IE is set to "requested" in *DCH Specific Info* IE for at least one DCH, and if the DRNS supports the DRAC, the DRNC shall include in the RADIO LINK RECONFIGURATION RESPONSE message the *Secondary CCPCH Info* IE for the FACH in which the DRAC information is sent, for each Radio Link supported by a cell in which DRAC is active. If the DRNS does not support DRAC, the DRNC shall not provide these IEs in the RADIO LINK RECONFIGURATION RESPONSE message.]
- If the *DCH Specific Info* IE includes the *Guaranteed Rate Information* IE, the DRNS shall treat the included IEs according to the following:
  - If the *Guaranteed Rate Information* IE includes the *Guaranteed UL Rate* IE, the DRNS shall apply the new Guaranteed Rate in the uplink of this DCH in the new configuration. The DRNS may decide to request the SRNC to limit the user rate of the uplink of the DCH at any point in time after activating the new configuration. The DRNS may request the SRNC to reduce the user rate of the uplink of the DCH below the guaranteed bit rate, however, whenever possible the DRNS should request the SRNC to reduce the user rate between the maximum bit rate and the guaranteed bit rate. If the *DCH Specific Info* IE in the *DCH Information* IE does not include the *Guaranteed UL Rate* IE, the DRNS shall not limit the user rate of the uplink of the DCH.
  - If the *Guaranteed Rate Information* IE includes the *Guaranteed DL Rate* IE, the DRNS shall apply the new Guaranteed Rate in the downlink of this DCH in the new configuration. The DRNS may decide to request the SRNC to limit the user rate of the downlink of the DCH at any point in time after activating the new configuration. The DRNS may request the SRNC to reduce the user rate of the downlink of the DCH below the guaranteed bit rate, however, whenever possible the DRNS should request the SRNC to reduce the user rate between the maximum bit rate and the guaranteed bit rate. If the *DCH Specific Info* IE in the *DCH Information* IE does not include the *Guaranteed DL Rate* IE, the DRNS shall not limit the user rate of the uplink of the DCH.

#### DCH Deletion:

If the RADIO LINK RECONFIGURATION REQUEST message includes any *DCHs To Delete* IEs, the DRNS shall not include the referenced DCHs in the new configuration.



If all of the DCHs belonging to a set of co-ordinated DCHs are requested to be deleted, the DRNS shall not include this set of co-ordinated DCHs in the new configuration.

**[FDD - Physical Channel Modification:]**

[FDD - If the RADIO LINK RECONFIGURATION REQUEST message includes an *UL DPCH Information IE*, then the DRNS shall apply the parameters to the new configuration as follows: ]

- [FDD - If the *UL DPCH Information IE* includes the *TFCS IE* for the UL, the DRNS shall apply the new TFCS in the Uplink of the new configuration.]

[FDD - If the RADIO LINK RECONFIGURATION REQUEST message includes a *DL DPCH Information IE*, then the DRNS shall apply the parameters to the new configuration as follows:]

- [FDD - If the *DL DPCH Information IE* includes the *TFCS IE* for the DL, the DRNS shall apply the new TFCS in the Downlink of the new configuration.]
- [FDD - If the *DL DPCH Information IE* includes the *TFCI Signalling Mode IE* for the DL, the DRNS shall apply the new TFCI Signalling Mode in the Downlink of the new configuration.]
- [FDD - If the *DL DPCH Information IE* includes the *Limited Power Increase IE* and the IE is set to "Used", the DRNS shall, if supported, use Limited Power Increase according to ref. [10] subclause 5.2.1 for the inner loop DL power control in the new configuration.]
- [FDD - If the *DL DPCH Information IE* includes the *Limited Power Increase IE* and the IE is set to "Not Used", the DRNS shall not use Limited Power Increase for the inner loop DL power control in the new configuration.]

[FDD - If the RADIO LINK RECONFIGURATION REQUEST message includes the *Transmission Gap Pattern Sequence Information IE*, the DRNS shall store the new information about the Transmission Gap Pattern Sequences to be used in the new Compressed Mode configuration. Any Transmission Gap Pattern Sequences already existing in the previous Compressed Mode Configuration are replaced by the new sequences once the new Compressed Mode Configuration has been activated. This new Compressed Mode Configuration shall be valid in the DRNS until the next Compressed Mode Configuration is configured in the DRNS or last Radio Link is deleted.]

[FDD - If the RADIO LINK RECONFIGURATION REQUEST message includes the *Transmission Gap Pattern Sequence Information IE*, and if the *Downlink Compressed Mode Method* in one or more Transmission Gap Pattern Sequence within the *Transmission Gap Pattern Sequence Information IE* is set to "SF/2", the DRNC shall include the *DL Code Information IE* in the RADIO LINK RECONFIGURATION RESPONSE message, without changing any of the DL Channelisation Codes or DL Scrambling Codes, indicating for each DL Channelisation Code whether the alternative scrambling code shall be used or not.]

[FDD - E-DPCH Handling: If the *E-DPCH Information IE* is included, the *UL DPDCH Indicator for E-DCH operation IE* in the *UL DPCH Information* shall be present as well. If the *UL DPDCH Indicator for E-DCH operation IE* is set to "UL DPDCH not present" the *Min UL Channelisation Code Length IE*, the *Puncture Limit IE* and the *TFCS IE*, within the *UL DPCH Information IE* shall be ignored.]

[FDD - If the RADIO LINK RECONFIGURATION REQUEST message includes an *E-DPCH Information IE* which contains the *E-TFCS IE*, the DRNS shall use the *E-TFCS IE* for the E-DCH when reserving resources for the uplink of the new configuration. The DRNS shall apply the new TFCS in the uplink of the new configuration.]

**[TDD - UL/DL CCTrCH Modification]**

[TDD - If the RADIO LINK RECONFIGURATION REQUEST message includes any *UL CCTrCH To Modify IE* or *DL CCTrCH To Modify IE*, the DRNS shall reserve necessary resources for the new configuration of the Radio Link(s) according to the parameters given in the message.]

[TDD - If the RADIO LINK RECONFIGURATION REQUEST message includes any *UL CCTrCH Information To Modify IEs* or *DL CCTrCH Information To Modify IEs* which contain a *TFCS IE*, the DRNS shall apply the included *TFCS IE* as the new value(s) to the referenced CCTrCH. Otherwise the DRNS shall continue to apply the previous value(s) specified for this CCTrCH.]

[1.28Mcps TDD - If the *UL CCTrCH To Modify IE* includes *UL SIR Target IE*, the DRNS shall apply this value as the new configuration and use it for the UL inner loop power control according [12] and [22].]

**[TDD - UL/DL CCTrCH Deletion]**

[TDD - If the RADIO LINK RECONFIGURATION REQUEST message includes any *UL CCTrCH Information To Delete* IEs or *DL CCTrCH Information To Delete* IEs, the DRNS shall not include the referenced CCTrCH in the new configuration.]

**DL Power Control:**

[FDD - If the RADIO LINK RECONFIGURATION REQUEST message includes the *DL Reference Power Information* IE and the power balancing is active, the DRNS shall update the reference power of the power balancing in the indicated RL(s), if updating of power balancing parameters by the RADIO LINK RECONFIGURATION REQUEST message is supported, using the *DL Reference Power Information* IE in the RADIO LINK RECONFIGURATION REQUEST message. The updated reference power shall be used from the next adjustment period.]

[FDD - If updating of power balancing parameters by the RADIO LINK RECONFIGURATION REQUEST message is supported by the DRNS, the DRNC shall include the *DL Power Balancing Updated Indicator* IE in the *RL Information Response* IE for each affected RL in the RADIO LINK RECONFIGURATION RESPONSE message.]

**[1.28Mcps TDD - Uplink Synchronisation Parameters LCR]:**

[1.28Mcps TDD - If the *Uplink Synchronisation Parameters LCR* IE is present, the DRNC shall use the indicated values of *Uplink synchronisation stepsize* IE and *Uplink synchronisation frequency* IE when evaluating the timing of the UL synchronisation.]

**[1.28Mcps TDD - Uplink Timing Advance Control LCR]:**

[1.28Mcps TDD - The DRNC shall include the *Uplink Timing Advance Control LCR* IE in the RADIO LINK RECONFIGURATION RESPONSE message, if the Uplink Timing Advance Control parameters have been changed.]

**[FDD – Phase Reference Handling]:**

[FDD – If the RADIO LINK RECONFIGURATION REQUEST message includes the *UE Support Of Dedicated Pilots For Channel Estimation* IE, the DRNC shall assume that dedicated pilots may be used for channel estimation for DCH or DSCH.]

[FDD – If the RADIO LINK RECONFIGURATION REQUEST message includes the *UE Support Of Dedicated Pilots For Channel Estimation Of HS-DSCH* IE, the DRNC shall assume that dedicated pilots may be used for channel estimation for HS-DSCH.]

**HS-DSCH Setup:**

If the *HS-DSCH Information* IE is present in the RADIO LINK RECONFIGURATION REQUEST message, then:

- The DRNS shall setup the requested HS-PDSCH resources on the Serving HS-DSCH Radio Link indicated by the *HS-PDSCH RL ID* IE.
- The DRNC shall include the *HARQ Memory Partitioning* IE in the [FDD – *HS-DSCH FDD Information Response* IE] [TDD – *HS-DSCH TDD Information Response* IE] in the RADIO LINK RECONFIGURATION RESPONSE message.
- The DRNC shall allocate an HS-DSCH-RNTI to the UE Context and include the *HS-DSCH-RNTI* IE in the RADIO LINK RECONFIGURATION RESPONSE message.
- The DRNS may use the *Traffic Class* IE for a specific HS-DSCH MAC-d flow to determine the transport bearer characteristics to apply between DRNC and Node B.
- If the RADIO LINK RECONFIGURATION REQUEST message includes the *MAC-hs Guaranteed Bit Rate* IE for a Priority Queue in the *HS-DSCH MAC-d Flows Information* IE in the *HS-DSCH Information* IE, then the DRNS shall use this information to optimise MAC-hs scheduling decisions for the related HSDPA Priority Queue.
- If the RADIO LINK RECONFIGURATION REQUEST message includes the *Discard Timer* IE for a Priority Queue in the *HS-DSCH MAC-d Flows Information* IE in the *HS-DSCH Information* IE, then the DRNS shall use this information to discard out-of-date MAC-hs SDUs from the related HSDPA Priority Queue.

- The DRNC shall include the *HS-DSCH Initial Capacity Allocation* IE in the [FDD – *HS-DSCH FDD Information Response* IE] [TDD – *HS-DSCH TDD Information Response* IE] in the RADIO LINK RECONFIGURATION RESPONSE message for every HS-DSCH MAC-d flow being established, if the DRNS allows the SRNC to start transmission of MAC-d PDUs before the DRNS has allocated capacity on user plane as described in [32].
- [FDD - If the RADIO LINK ~~RECONFIGURATION PREPARE~~RECONFIGURATION REQUEST message includes the *HS-SCCH Power Offset* IE in the *HS-DSCH Information* IE, then the DRNS may use this value to determine the HS-SCCH power. The HS-SCCH Power Offset should be applied for any HS-SCCH transmission to this UE.]
- [FDD - The DRNS shall allocate HS-SCCH codes corresponding to the HS-DSCH and the DRNC shall include the *HS-SCCH Specific Information Response* IE in the *HS-DSCH FDD Information Response* IE in the RADIO LINK RECONFIGURATION RESPONSE message.]
- [TDD - The DRNS shall allocate HS-SCCH parameters corresponding to the HS-DSCH and the DRNC shall include the [3.84Mcps TDD - *HS-SCCH Specific Information Response* IE] [1.28Mcps TDD - *HS-SCCH Specific Information Response LCR* IE] in the *HS-DSCH TDD Information Response* IE in the RADIO LINK RECONFIGURATION RESPONSE message.]
- [FDD - The DRNC shall include the *HS-PDSCH And HS-SCCH Scrambling Code* IE in the *HS-DSCH FDD Information Response* IE in the RADIO LINK RECONFIGURATION RESPONSE message.]

#### Intra-DRNS Serving HS-DSCH Radio Link Change:

If the RADIO LINK RECONFIGURATION REQUEST message includes the *HS-PDSCH RL ID* IE, this indicates the new Serving HS-DSCH Radio Link:

- The DRNS shall release the HS-PDSCH resources on the old Serving HS-DSCH Radio Link and setup the HS-PDSCH resources on the new Serving HS-DSCH Radio Link.
- The DRNC may include the *HARQ Memory Partitioning* IE in the [FDD – *HS-DSCH FDD Information Response* IE] [TDD – *HS-DSCH TDD Information Response* IE] in the RADIO LINK RECONFIGURATION RESPONSE message.
- The DRNC shall allocate a new HS-DSCH-RNTI to the UE Context and include the *HS-DSCH-RNTI* IE in the RADIO LINK RECONFIGURATION RESPONSE message.
- If a reset of the MAC-hs is not required the DRNS shall include the *MAC-hs Reset Indicator* IE in the RADIO LINK RECONFIGURATION RESPONSE message.
- [FDD - The DRNC shall include the *Measurement Power Offset* IE in the *HS-DSCH Information Response* IE in the RADIO LINK RECONFIGURATION RESPONSE message.]
- [FDD - The DRNS shall allocate HS-SCCH codes corresponding to the HS-DSCH and the DRNC shall include the *HS-SCCH Specific Information Response* IE in the *HS-DSCH FDD Information Response* IE in the RADIO LINK RECONFIGURATION RESPONSE message.]
- [TDD - The DRNS shall allocate HS-SCCH parameters corresponding to the HS-DSCH and the DRNC shall include the [3.84Mcps TDD - *HS-SCCH Specific Information Response* IE] [1.28Mcps TDD - *HS-SCCH Specific Information Response LCR* IE] in the *HS-DSCH TDD Information Response* IE in the RADIO LINK RECONFIGURATION RESPONSE message.]
- [TDD - The DRNC shall include the [3.84 Mcps TDD - *HS-PDSCH Timeslot Specific Information* IE] [1.28 Mcps TDD - *HS-PDSCH Timeslot Specific Information LCR* IE] in the *HS-DSCH Information Response* IE in the RADIO LINK RECONFIGURATION RESPONSE message.]
- [FDD - The DRNC shall include the *HS-PDSCH And HS-SCCH Scrambling Code* IE in the *HS-DSCH FDD Information Response* IE in the RADIO LINK RECONFIGURATION RESPONSE message.]

#### HS-DSCH Modification:

If the RADIO LINK RECONFIGURATION REQUEST message includes the *HS-DSCH Information To Modify Unsynchronised* IE, then:

- The DRNC shall include the *HS-DSCH Initial Capacity Allocation* IE for each HS-DSCH MAC-d flow being modified for which a new transport bearer was requested with the *Transport Bearer Request Indicator* IE, if the DRNS allows the SRNC to start transmission of MAC-d PDUs before the DRNS has allocated capacity on user plane as described in [32].
- If the RADIO LINK RECONFIGURATION REQUEST message includes the *Traffic Class* IE in the *HS-DSCH Information To Modify Unsynchronised* IE for a specific HS-DSCH MAC-d flow, the DRNS may use this information to determine the transport bearer characteristics to apply between DRNC and Node B.
- If the RADIO LINK RECONFIGURATION REQUEST message includes the *MAC-hs Guaranteed Bit Rate* IE in the *HS-DSCH Information To Modify Unsynchronised* IE, the DRNS shall use this information to optimise MAC-hs scheduling decisions for the related HSDPA Priority Queue.
- If the RADIO LINK RECONFIGURATION REQUEST message includes the *Discard Timer* IE in the *HS-DSCH Information* IE, then the DRNS shall use this information to discard out-of-date MAC-hs SDUs from the related HSDPA Priority Queue.
- [FDD - If the RADIO LINK RECONFIGURATION REQUEST message includes the *ACK Power Offset* IE, the *NACK Power Offset* IE or the *CQI Power Offset* IE in the *HS-DSCH Information To Modify Unsynchronised* IE, then the DRNS shall use the indicated ACK Power Offset, the NACK Power Offset or the CQI Power Offset in the new configuration.]
- [FDD - If the *HS-SCCH Power Offset* IE is included in the *HS-DSCH Information To Modify Unsynchronised* IE, the DRNS may use this value to determine the HS-SCCH power. The HS-SCCH Power Offset should be applied for any HS-SCCH transmission to this UE.]
- [TDD – If the RADIO LINK RECONFIGURATION REQUEST message includes the *TDD ACK NACK Power Offset* IE in the *HS-DSCH Information To Modify Unsynchronised* IE, the DRNS shall use the indicated power offset in the new configuration.]

#### **HS-DSCH MAC-d Flow Addition/Deletion:**

If the RADIO LINK RECONFIGURATION REQUEST message includes any *HS-DSCH MAC-d Flows To Add* or *HS-DSCH MAC-d Flows To Delete* IEs, then the DRNS shall use this information to add/delete the indicated HS-DSCH MAC-d flows on the Serving HS-DSCH Radio Link. When an HS-DSCH MAC-d flow is deleted, all its associated Priority Queues shall also be removed.

If the RADIO LINK RECONFIGURATION REQUEST message includes an *HS-DSCH MAC-d Flows To Delete* IE requesting the deletion of all remaining HS-DSCH MAC-d flows for the UE Context, then the DRNC shall delete the HS-DSCH configuration from the UE Context and release the HS-PDSCH resources.

If the RADIO LINK RECONFIGURATION REQUEST message includes the *HS-DSCH MAC-d Flows To Add* IE, then:

- The DRNS may use the *Traffic Class* IE for a specific HS-DSCH MAC-d flow to determine the transport bearer characteristics to apply between DRNC and Node B.
- If the RADIO LINK RECONFIGURATION REQUEST message includes the *Traffic Class* IE in the *HS-DSCH MAC-d Flows To Add* IE for a specific HS-DSCH MAC-d flow, the DRNS may use this information to determine the transport bearer characteristics to apply between DRNC and Node B.
- The DRNC shall include the *HS-DSCH Initial Capacity Allocation* IE in the RADIO LINK RECONFIGURATION RESPONSE message for every HS-DSCH MAC-d flow being added, if the DRNS allows the SRNC to start transmission of MAC-d PDUs before the DRNS has allocated capacity on user plane as described in [32].
- If the RADIO LINK RECONFIGURATION REQUEST message includes the *MAC-hs Guaranteed Bit Rate* IE in the *HS-DSCH MAC-d Flows To Add* IE, the DRNS shall use this information to optimise MAC-hs scheduling decisions for the related HSDPA Priority Queue.

If the RADIO LINK RECONFIGURATION REQUEST message includes the *Discard Timer* IE in the *HS-DSCH Information* IE, then the DRNS shall use this information to discard out-of-date MAC-hs SDUs from the related HSDPA Priority Queue.

#### **E-DCH Setup:**

If the *E-DCH FDD Information IE* is present in the RADIO LINK RECONFIGURATION REQUEST message and the *RL Information IE* contains the *RL specific E-DCH Information IE* for one Radio Link then:

- The DRNS shall setup the requested E-DCH resources on the Radio Link indicated by the *RL ID IE* in the *RL Information IE*.
- The RADIO LINK RECONFIGURATION REQUEST message shall contain in the *RL Information IE* for every RL the *E-DCH RL Indication IE* indication whether this RL has configured E-DCH resources.
- If the RADIO LINK RECONFIGURATION REQUEST message includes the *MAC-e Guaranteed Bit Rate IE* for an E-DCH MAC-d flow in the *E-DCH FDD Information IE*, then the DRNS shall use this information to optimise MAC-e scheduling decisions.
- If the RADIO LINK RECONFIGURATION REQUEST message includes the *Maximum Number of Retransmissions for E-DCH IE* for a E-DCH MAC-d flow in the *E-DCH FDD Information IE*, then the DRNS shall use this information to report if the maximum number of retransmissions has been exceeded.
- The DRNS may use the *Traffic Class IE* for a specific E-DCH MAC-d flow to determine the transport bearer characteristics to apply between DRNC and Node B.
- If the *TNL QoS IE* is included for a E-DCH MAC-d flow and if ALCAP is not used, the *TNL QoS IE* may be used by the DRNS to determine the transport bearer characteristics to apply in the uplink for the related MAC-d flow.
- The DRNC shall include the *E-AGCH and E-RGCH and E-HICH FDD Scrambling Code IE* and the *E-RGCH and E-HICH Channelisation Code IE* and the corresponding *Sequence number for E-RGCH IE* and the *Sequence number for E-HICH IE* in the *E-DCH FDD DL Control Channel Information IE* in the RADIO LINK RECONFIGURATION RESPONSE message.

#### **E-DCH Modification:**

If the RADIO LINK RECONFIGURATION REQUEST message includes the *E-DCH FDD Information To Modify IE*, then:

- If the *E-DCH MAC-d Flow Information IE* includes the *Payload CRC Presence Indicator IE* the DRNS shall apply the payload indicator in the Uplink of the user plane for the E-DCH in the new configuration.
- If the *E-DCH FDD Information To Modify IE* contains a *E-DCH MAC-d Flow Information IE* which includes the *Allocation/Retention Priority IE*, the DRNS shall apply the new Allocation/Retention Priority to this E-DCH in the new configuration according to Annex A.
- If the *TNL QoS IE* is included for a E-DCH MAC-d flow and if ALCAP is not used, the *TNL QoS IE* may be used by the DRNS to determine the transport bearer characteristics to apply in the uplink for the related MAC-d flow.
- If the RADIO LINK RECONFIGURATION REQUEST message includes the *Data Description Indicator IE*, the DRNC shall use the DDI values indicated in the *Data Description Indicator IE* in the new configuration.
- If the RADIO LINK RECONFIGURATION REQUEST message includes the *MAC-e Guaranteed Bit Rate IE* in the *E-DCH FDD Information To Modify IE*, the DRNS shall use this information to optimise MAC-e scheduling decisions.
- If the RADIO LINK RECONFIGURATION REQUEST message includes the *Maximum Number of Retransmissions for E-DCH IE* for a E-DCH MAC-d flow in the *E-DCH FDD Information To Modify IE*, then the DRNS shall use this information to report if the maximum number of retransmissions has been exceeded.
- The DRNC shall include the *E-AGCH and E-RGCH and E-HICH FDD Scrambling Code IE* and the *E-RGCH and E-HICH Channelisation Code IE* and the corresponding *Sequence number for E-RGCH IE* and the *Sequence number for E-HICH IE* in the *E-DCH FDD DL Control Channel Information IE* in the RADIO LINK RECONFIGURATION RESPONSE message.

#### **E-DCH MAC-d Flow Addition/Deletion:**

If the RADIO LINK RECONFIGURATION REQUEST message includes any *E-DCH MAC-d Flows To Add* or *E-DCH MAC-d Flows To Delete* IEs, then the DRNS shall use this information to add/delete the indicated E-DCH MAC-d

flows on the Serving E-DCH Radio Link. When an E-DCH MAC-d flow is deleted, all its associated Priority Queues shall also be removed.

If the RADIO LINK RECONFIGURATION REQUEST message includes an E-DCH MAC-d Flows To Delete IE requesting the deletion of all remaining E-DCH MAC-d flows for the UE Context, then the DRNC shall delete the E-DCH configuration from the UE Context and release the E-DCH resources.

If the RADIO LINK RECONFIGURATION REQUEST message includes the E-DCH MAC-d Flows To Add IE, then:

- The DRNS may use the Traffic Class IE for a specific E-DCH MAC-d flow to determine the transport bearer characteristics to apply between DRNC and Node B.
- If the RADIO LINK RECONFIGURATION REQUEST message includes the MAC-e Guaranteed Bit Rate IE in the E-DCH MAC-d Flows To Add IE, the DRNS shall use this information to optimise MAC-e scheduling decisions.

### General:

If the requested modifications are allowed by the DRNS, and if the DRNS has successfully allocated the required resources and changed to the new configuration, the DRNC shall respond to the SRNC with the RADIO LINK RECONFIGURATION RESPONSE message.

If the RADIO LINK RECONFIGURATION REQUEST message includes the *RL Specific DCH Information IE*, *HS-DSCH Information IE*, *HS-DSCH Information To Modify Unsynchronised IE*, ~~or~~ *HS-DSCH MAC-d Flows To Add IE*, ~~or~~ *E-DCH MAC-d Flows to Add IE*, the DRNC may use the transport layer address and the binding identifier received from the SRNC when establishing a transport bearer for any Transport Channel, ~~or~~ *HS-DSCH MAC-d flow* ~~or~~ *E-DCH MAC-d flow* being added, or any Transport Channel or HS-DSCH MAC-d flow being modified for which a new transport bearer was requested with the *Transport Bearer Request Indicator IE*.

The DRNC shall include the *Transport Layer Address IE* and the *Binding ID IE* in the RADIO LINK RECONFIGURATION RESPONSE message for any Transport Channel, ~~or~~ *HS-DSCH MAC-d flow* ~~or~~ *E-DCH MAC-d flow* being added, or any Transport Channel, ~~or~~ *HS-DSCH MAC-d flow* ~~or~~ *E-DCH MAC-d flow* being modified for which a new transport bearer was requested with the *Transport Bearer Request Indicator IE*. The detailed frame protocol handling during transport bearer replacement is described in [4], subclause 5.10.1.

In the case of a set of co-ordinated DCHs requiring a new transport bearer on the Iur interface, the DRNC shall include the *Transport Layer Address IE* and the *Binding ID IE* in the *DCH Information Response IE* only for one of the DCHs in the set of co-ordinated DCHs.

In the case of a Radio Link being combined with another Radio Link within the DRNS, the DRNC shall include the *Transport Layer Address IE* and the *Binding ID IE* in the *DCH Information Response IE* in the RADIO LINK RECONFIGURATION RESPONSE message for only one of the combined Radio Links.

Any allowed rate for the uplink of a modified DCH provided for the old configuration will not be valid for the new configuration. If the DRNS needs to limit the user rate in the uplink of a DCH due to congestion caused by the UL UTRAN Dynamic Resources (see subclause 9.2.1.79) in the new configuration for a Radio Link, the DRNC shall include in the RADIO LINK RECONFIGURATION RESPONSE message the *Allowed UL Rate IE* in the *DCH Information Response IE* for this Radio Link.

Any allowed rate for the downlink of a modified DCH provided for the old configuration will not be valid for the new configuration. If the DRNS needs to limit the user rate in the downlink of a DCH due to congestion caused by the DL UTRAN Dynamic Resources (see subclause 9.2.1.79) in the new configuration for a Radio Link, the DRNC shall include in the RADIO LINK RECONFIGURATION RESPONSE message the *Allowed DL Rate IE* in the *DCH Information Response IE* for this Radio Link.

The DRNS decides the maximum and minimum SIR for the uplink of the Radio Link(s), and the DRNC shall include in the RADIO LINK RECONFIGURATION RESPONSE message the *Maximum Uplink SIR IE* and *Minimum Uplink SIR IE* for each Radio Link when these values are changed.

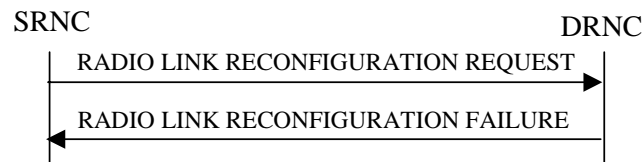
[FDD - If the DL TX power upper or lower limit has been re-configured, the DRNC shall include the new value(s) in the *Maximum DL TX Power IE* and *Minimum DL TX Power IE* in the RADIO LINK RECONFIGURATION RESPONSE message. The DRNS shall not transmit with a higher power than indicated by the *Maximum DL TX Power IE* or lower than indicated by the *Minimum DL TX Power IE* on any DL DPCH of the RL except during compressed

mode, when the  $\delta P_{curr}$ , as described in ref.[10] subclause 5.2.1.3, shall be added to the maximum DL power for the associated compressed frame.]

[3.84 Mcps TDD - If the DL TX power upper or lower limit has been re-configured, the DRNC shall include the new value(s) in the *Maximum DL TX Power* IE and *Minimum DL TX Power* IE in the RADIO LINK RECONFIGURATION RESPONSE message. If the maximum or minimum power needs to be different for particular DCH type CCTrCHs, the DRNC shall include the new value(s) for that CCTrCH in the *CCTrCH Maximum DL TX Power* IE and *CCTrCH Minimum DL TX Power*. The DRNS shall not transmit with a higher power than indicated by the appropriate *Maximum DL TX Power* IE/*CCTrCH Maximum DL TX Power* IE or lower than indicated by the appropriate *Minimum DL TX Power* IE/*CCTrCH Minimum DL TX Power* IE on any DL DPCH within each CCTrCH of the RL.]

[1.28 Mcps TDD - If the DL TX power upper or lower limit has been re-configured, the DRNC shall include the new value(s) in the *Maximum DL TX Power* IE and *Minimum DL TX Power* IE in the RADIO LINK RECONFIGURATION RESPONSE message. If the maximum or minimum power needs to be different for particular timeslots within a DCH type CCTrCH, the DRNC shall include the new value(s) for that timeslot in the *Maximum DL TX Power* IE and *Minimum DL TX Power* within the *DL Timeslot Information LCR* IE. The DRNS shall not transmit with a higher power than indicated by the appropriate *Maximum DL TX Power* IE or lower than indicated by the appropriate *Minimum DL TX Power* IE on any DL DPCH within each timeslot of the RL.]

### 8.3.7.3 Unsuccessful Operation



**Figure 15: Unsynchronised Radio Link Reconfiguration procedure, Unsuccessful Operation**

If the DRNS cannot allocate the necessary resources for all the new DCHs in a set of co-ordinated DCHs requested to be added, it shall reject the Unsynchronised Radio Link Reconfiguration procedure as having failed.

If the requested Unsynchronised Radio Link Reconfiguration procedure fails for one or more Radio Link(s), the DRNC shall send the RADIO LINK RECONFIGURATION FAILURE message to the SRNC, indicating the reason for failure.

Typical cause values are:

#### Radio Network Layer Causes:

- UL Scrambling Code Already in Use;
- DL Radio Resources not Available;
- UL Radio Resources not Available;
- Requested Configuration not Supported;
- CM not Supported.

#### Miscellaneous Causes:

- Control Processing Overload;
- Not enough User Plane Processing Resources.

### 8.3.7.4 Abnormal Conditions

If only a subset of all the DCHs belonging to a set of co-ordinated DCHs is requested to be deleted, the DRNS shall reject the Unsynchronised Radio Link Reconfiguration procedure as having failed, and the DRNC shall send the RADIO LINK RECONFIGURATION FAILURE message to the SRNC.

If more than one DCH of a set of co-ordinated DCHs has the *QE-Selector* IE set to "selected" [TDD - or no DCH of a set of co-ordinated DCHs has the *QE-Selector* IE set to "selected"], the DRNS shall reject the Unsynchronised Radio

Link Reconfiguration procedure, and the DRNC shall respond with a RADIO LINK RECONFIGURATION FAILURE message.

If the RADIO LINK RECONFIGURATION REQUEST message includes a *DCHs To Modify* IE or *DCHs To Add* IE with multiple *DCH Specific Info* IEs, and if the DCHs in the *DCHs To Modify* IE or *DCHs To Add* IE do not have the same *Transmission Time Interval* IE in the *Semi-static Transport Format Information* IE, then the DRNC shall reject the procedure using the RADIO LINK RECONFIGURATION FAILURE message.

[FDD - If the RADIO LINK RECONFIGURATION REQUEST message includes the *DL Reference Power Information* IE, but the power balancing is not active in the indicated RL(s), the DRNS shall reject the Unsynchronised Radio Link Reconfiguration procedure as having failed and the DRNC shall respond the RADIO LINK RECONFIGURATION FAILURE message with the cause value "Power Balancing status not compatible".]

[FDD - If the power balancing is active with the Power Balancing Adjustment Type of the UE Context set to "Common" in the existing RL(s) but the *DL Reference Power Information* IE includes the *Individual DL Reference Power Information* IE, the DRNS shall reject the Unsynchronised Radio Link Reconfiguration procedure as having failed and the DRNC shall respond with the RADIO LINK RECONFIGURATION FAILURE message with the cause value "Power Balancing status not compatible".]

[FDD - If the power balancing is active with the Power Balancing Adjustment Type of the UE Context set to "Individual" in the existing RL(s) but the *DL Reference Power Information* IE includes the *Common DL Reference Power* IE, the DRNS shall reject the Unsynchronised Radio Link Reconfiguration procedure as having failed and the DRNC shall respond with the RADIO LINK RECONFIGURATION FAILURE message with the cause value "Power Balancing status not compatible".]

If the RADIO LINK RECONFIGURATION REQUEST message contains the *Transport Layer Address* IE or the *Binding ID* IE when establishing a transport bearer for any Transport Channel or HS-DSCH MAC-d flow being added, or any Transport Channel or HS-DSCH MAC-d flow being modified for which a new transport bearer was requested with the *Transport Bearer Request Indicator* IE., and not both are present for a transport bearer intended to be established, the DRNC shall reject the Unsynchronised Radio Link Reconfiguration procedure, and the DRNC shall respond with a RADIO LINK RECONFIGURATION FAILURE message.

If the RADIO LINK RECONFIGURATION REQUEST message contains any of the *HS-DSCH Information To Modify* IE, *HS-DSCH MAC-d Flows To Add* IE or *HS-DSCH MAC-d Flows To Delete* IE in addition to the *HS-DSCH Information* IE, the DRNC shall reject the procedure using the RADIO LINK RECONFIGURATION FAILURE message.

If the RADIO LINK RECONFIGURATION REQUEST message contains any of the *HS-DSCH Information To Modify* IE, *HS-DSCH MAC-d Flows To Add* IE, *HS-DSCH MAC-d Flows To Delete* IE or *HS-PDSCH RL ID* IE and the Serving HS-DSCH Radio Link is not in the DRNS, the DRNC shall reject the procedure using the RADIO LINK RECONFIGURATION FAILURE message.

If the RADIO LINK RECONFIGURATION REQUEST message includes the *HS-DSCH Information* IE and does not include the *HS-PDSCH RL-ID* IE, the DRNC shall reject the procedure using the RADIO LINK RECONFIGURATION FAILURE message.

If the RADIO LINK RECONFIGURATION REQUEST message includes the *HS-PDSCH RL-ID* IE indicating a Radio Link not existing in the UE Context, the DRNS shall reject the procedure using the RADIO LINK RECONFIGURATION FAILURE message.

If the RADIO LINK RECONFIGURATION REQUEST message contains any of the *HS-DSCH Information* IE, *HS-DSCH Information To Modify* IE, or *HS-DSCH MAC-d Flows To Add* IE and if in the new configuration the Priority Queues associated with the same *HS-DSCH MAC-d Flow ID* IE have the same *Scheduling Priority Indicator* IE value, the DRNC shall reject the procedure using the RADIO LINK RECONFIGURATION FAILURE message.

## 8.3.8 Physical Channel Reconfiguration

### 8.3.8.1 General

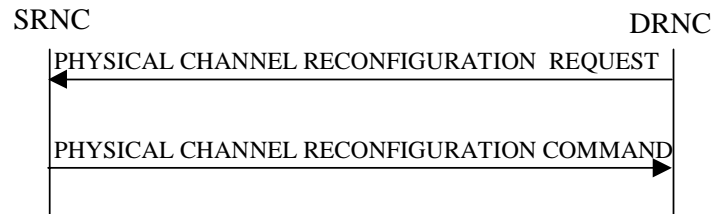
The Physical Channel Reconfiguration procedure is used by the DRNS to request the SRNC to reconfigure one of the configured physical channels.



This procedure shall use the signalling bearer connection for the relevant UE Context.

The DRNS shall not initiate the Physical Channel Reconfiguration procedure if a Prepared Reconfiguration exists as defined in subclause 3.1, or if a Synchronised Radio Link Reconfiguration Preparation procedure, Unsynchronised Radio Link Reconfiguration procedure or Radio Link Deletion procedure is ongoing for the relevant UE context.

### 8.3.8.2 Successful Operation



**Figure 16: Physical Channel Reconfiguration procedure, Successful Operation**

When the DRNC detects the need to modify one of its physical channels, it shall send a PHYSICAL CHANNEL RECONFIGURATION REQUEST to the SRNC.

The PHYSICAL CHANNEL RECONFIGURATION REQUEST message contains the new value(s) of the physical channel parameter(s) of the radio link for which the DRNC is requesting the reconfiguration.

[FDD - If compressed mode is prepared or active and at least one of the downlink compressed mode methods is "SF/2", the DRNC shall include the *Transmission Gap Pattern Sequence Scrambling Code Information* IE in the *DL Code Information* IE in the PHYSICAL CHANNEL RECONFIGURATION REQUEST message indicating for each DL Channelisation Code whether the alternative scrambling code will be used or not if the downlink compressed mode methods "SF/2" is activated.]

[TDD - The SRNC shall apply the new values for any of [3.84Mcps TDD - *UL Code Information* IE, *Midamble Shift And Burst Type* IE,], [1.28Mcps TDD - *UL Code Information LCR* IE, *Midamble Shift LCR* IE], *TDD DPCH Offset* IE, *Repetition Period* IE, *Repetition Length* IE, or *TFCI presence* IE included in the *UL DPCH Information* IE within the PHYSICAL CHANNEL RECONFIGURATION REQUEST message, otherwise the previous values specified for this DPCH shall still apply.]

[TDD - The SRNC shall apply the new values for any of [3.84Mcps TDD - *DL Code Information* IE, *Midamble Shift And Burst Type* IE,] [1.28Mcps TDD - *DL Code Information LCR* IE, *Midamble Shift LCR* IE,] *TDD DPCH Offset* IE, *Repetition Period* IE, *Repetition Length* IE, or *TFCI presence* IE included in the *DL DPCH Information* IE within the PHYSICAL CHANNEL RECONFIGURATION REQUEST message, otherwise the previous values specified for this DPCH shall still apply.]

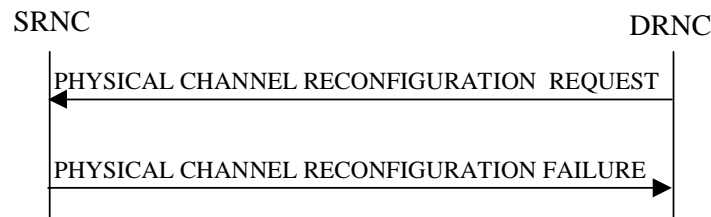
[3.84 Mcps TDD - If the PHYSICAL CHANNEL RECONFIGURATION REQUEST includes *HS-PDSCH Timeslot Specific Information* IE the SRNC shall apply the values of the *Midamble Shift And Burst Type* IE for each HS-PDSCH timeslot.]

[1.28 Mcps TDD - If the PHYSICAL CHANNEL RECONFIGURATION REQUEST includes *HS-PDSCH Timeslot Specific Information LCR* IE the SRNC shall apply the values of the *Midamble Shift LCR* IE for each HS-PDSCH timeslot.]

Upon receipt of the PHYSICAL CHANNEL RECONFIGURATION REQUEST, the SRNC shall decide an appropriate execution time for the change. The SRNC shall respond with a PHYSICAL CHANNEL RECONFIGURATION COMMAND message to the DRNC that includes the *CFN* IE indicating the execution time.

At the CFN, the DRNS shall switch to the new configuration that has been requested, and release the resources related to the old physical channel configuration.

### 8.3.8.3 Unsuccessful Operation



**Figure 17: Physical Channel Reconfiguration procedure, Unsuccessful Operation**

If the SRNC cannot accept the reconfiguration request it shall send the PHYSICAL CHANNEL RECONFIGURATION FAILURE message to the DRNC, including the reason for the failure in the *Cause IE*.

Typical cause values are:

**Radio Network Layer Causes:**

- Reconfiguration not Allowed.

### 8.3.8.4 Abnormal Conditions

While waiting for the PHYSICAL CHANNEL RECONFIGURATION COMMAND message, if the DRNC receives any of the RADIO LINK RECONFIGURATION PREPARE, RADIO LINK RECONFIGURATION REQUEST, or RADIO LINK DELETION REQUEST messages, the DRNC shall abort the Physical Channel Reconfiguration procedure. These messages thus override the DRNC request for physical channel reconfiguration.

When the SRNC receives a PHYSICAL CHANNEL RECONFIGURATION REQUEST message while a Synchronised Radio Link Reconfiguration procedure, Unsynchronised Radio Link Reconfiguration procedure or Radio Link Deletion procedure is ongoing, the SRNC shall ignore the request message and assume that receipt of any of the messages RADIO LINK RECONFIGURATION PREPARE, RADIO LINK RECONFIGURATION REQUEST or RADIO LINK DELETION REQUEST by the DRNC has terminated the Physical Channel Reconfiguration procedure. In this case the SRNC shall not send a PHYSICAL CHANNEL RECONFIGURATION FAILURE message to the DRNC.

## 8.3.9 Radio Link Failure

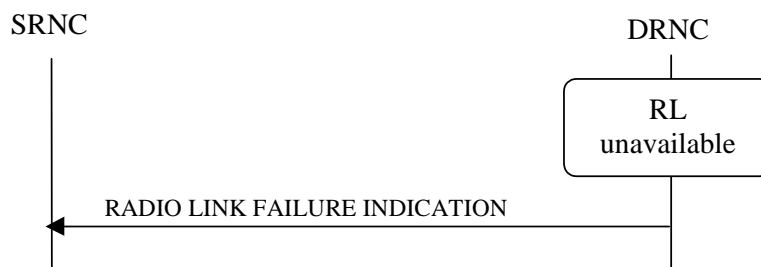
### 8.3.9.1 General

This procedure is started by the DRNS when one or more Radio Links [FDD - or Radio Link Sets][TDD - or CCTrCHs within a Radio Link] are no longer available.

This procedure shall use the signalling bearer connection for the relevant UE Context.

The DRNS may initiate the Radio Link Failure procedure at any time after establishing a Radio Link.

### 8.3.9.2 Successful Operation



**Figure 18: Radio Link Failure procedure, Successful Operation**

When the DRNC detects that one or more Radio Link(s) [FDD - or Radio Link Set(s)] [TDD - or CCTrCHs within a Radio Link] are no longer available, it shall send the RADIO LINK FAILURE INDICATION message to the SRNC. The message indicates the failed Radio Link(s) [FDD - or Radio Link Set(s)] [TDD - or CCTrCHs] with the most appropriate cause values defined in the *Cause* IE. If the failure concerns one or more individual Radio Links the DRNC shall include the affected Radio Link(s) using the *RL Information* IE. [FDD - If the failure concerns one or more Radio Link Set(s) the DRNC shall include the affected Radio Link Set(s) using the *RL Set Information* IE.] [TDD - If the failure concerns only the failure of one or more CCTrCHs within a radio link the DRNC shall include the affected CCTrCHs using the *CCTrCH ID* IE].

When the RL Failure procedure is used to notify loss of UL synchronisation of a [FDD - Radio Link Set] [TDD - Radio Link or CCTrCHs within a Radio Link] on the Uu interface, the RADIO LINK FAILURE INDICATION message shall be sent with the *Cause* IE set to "Synchronisation Failure" when indicated by the UL synchronisation detection algorithm defined in ref. [10] subclause 4.3 and [22] subclause 4.4.2.

[FDD - When the Radio Link Failure procedure is used to indicate permanent failure in one or more Radio Link(s)/Radio Link Set(s) due to the occurrence of an UL or DL frame with more than one transmission gap caused by one or more compressed mode pattern sequences, the DL transmission shall be stopped and the RADIO LINK FAILURE INDICATION message shall be sent with the *Cause Value* IE set to "Invalid CM Settings". After sending the RADIO LINK FAILURE INDICATION message to notify the permanent failure, the DRNS shall not remove the Radio Link(s)/Radio Link Set(s) from the UE Context, or remove the UE Context itself.]

In the other cases the Radio Link Failure procedure is used to indicate that one or more Radio Link(s) [FDD - or Radio Link Set(s)] are permanently unavailable and cannot be restored. After sending the RADIO LINK FAILURE INDICATION message to notify the permanent failure, the DRNS shall not remove the Radio Link from the UE Context, or remove the UE Context itself. When applicable, the allocation retention priorities associated with the transport channels shall be used by the DRNS to prioritise which Radio Links to indicate as unavailable to the SRNC.

Typical cause values are:

**Radio Network Layer Causes:**

- Synchronisation Failure;
- Invalid CM Settings.

**Transport Layer Causes:**

- Transport Resources Unavailable.

**Miscellaneous Causes:**

- Control Processing Overload;
- HW Failure;
- O&M Intervention.

### 8.3.9.3 Abnormal Conditions

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## 8.3.10 Radio Link Restoration

### 8.3.10.1 General

This procedure is used to notify establishment and re-establishment of UL synchronisation of one or more [FDD - RL Set(s)] [TDD - Radio Links or CCTrCH(s) in a Radio Link] on the Uu interface.

This procedure shall use the signalling bearer connection for the relevant UE Context.

The DRNC may initiate the Radio Link Restoration procedure at any time after establishing a Radio Link.

### 8.3.10.2 Successful Operation



**Figure 19: Radio Link Restoration procedure, Successful Operation**

The DRNC shall send the RADIO LINK RESTORE INDICATION message to the SRNC when and as specified by the UL Uu synchronisation detection algorithm defined in ref. [10] subclause 4.3 and [22] subclause 4.4.2. [FDD - The algorithm in ref. [10] shall use the minimum value of the parameters N\_INSYNC\_IND that are configured in the cells supporting the radio links of the RL Set.]

[TDD - If the re-established UL Uu synchronisation concerns one or more individual Radio Links the DRNC shall include in the RADIO LINK RESTORE INDICATION message the *RL Information* IE to indicate the affected Radio Link(s).] [TDD - If the re-established synchronisation concerns one or more individual CCTrCHs within a radio link the DRNS shall include in the RADIO LINK RESTORE INDICATION message the *RL Information* IE to indicate the affected CCTrCHs.] [FDD - If the re-established UL Uu synchronisation concerns one or more Radio Link Sets the DRNC shall include in the RADIO LINK RESTORE INDICATION message the *RL Set Information* IE to indicate the affected Radio Link Set(s).]

### 8.3.10.3 Abnormal Conditions

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## 8.3.11 Dedicated Measurement Initiation

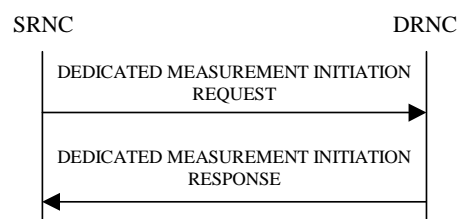
### 8.3.11.1 General

This procedure is used by an SRNS to request the initiation of dedicated measurements in a DRNS.

This procedure shall use the signalling bearer connection for the relevant UE Context.

The Dedicated Measurement Initiation procedure shall not be initiated if a Prepared Reconfiguration exists, as defined in subclause 3.1.

### 8.3.11.2 Successful Operation



**Figure 20: Dedicated Measurement Initiation procedure, Successful Operation**

The procedure is initiated with a DEDICATED MEASUREMENT INITIATION REQUEST message sent from the SRNC to the DRNC.

Upon receipt, the DRNC shall initiate the requested dedicated measurement according to the parameters given in the DEDICATED MEASUREMENT INITIATION REQUEST message.

If the Dedicated Measurement Object Type is indicated as being "RL" in the DEDICATED MEASUREMENT INITIATION REQUEST message, measurement results shall be reported for all the indicated Radio Links.

[FDD - If the Dedicated Measurement Object Type is indicated as being "RLS" in the DEDICATED MEASUREMENT INITIATION REQUEST message, measurement results shall be reported for all the indicated Radio Link Sets.]

[FDD - If the Dedicated Measurement Object Type is indicated as being "ALL RL" in the DEDICATED MEASUREMENT INITIATION REQUEST message, measurement results shall be reported for all current and future Radio Links within the UE Context.]

[TDD - If the Dedicated Measurement Object Type is indicated as being "ALL RL" in the DEDICATED MEASUREMENT INITIATION REQUEST message, measurement results shall be reported for one existing DPCH per CCTrCH in each used time slot of current and future Radio Links within the UE Context, provided the measurement type is applicable to the respective DPCH.]

[FDD - If the Dedicated Measurement Object Type is indicated as being "ALL RLS" in the DEDICATED MEASUREMENT INITIATION REQUEST message, measurement results shall be reported for all the existing and future Radio Link Sets within the UE Context.]

[TDD - If the *DPCH ID* IE is provided within the RL Information, the measurement request shall apply for the requested physical channel individually. If no *DPCH ID* IE or *HS-SICH ID* IE is provided within the RL Information the measurement request shall apply for one existing DPCH per CCTrCH in each used time slot of the Radio Link, provided the measurement type is applicable to this DPCH.]

[TDD - If the *HS-SICH Information* IE is provided within the RL Information, the measurement request shall apply for the requested physical channel individually.]

[TDD - If the *Dedicated Measurement Type* IE is set to "HS-SICH reception quality ", the DRNS shall initiate measurements of the failed, missed and total HS-SICH transmissions on all of the HS-SICH assigned to this UE Context. If either the failed or missed HS-SICH transmission satisfies the requested report characteristics, the DRNS shall report the result of both failed and missed transmission measurements along with the total number of transmissions.]

### Report characteristics

The *Report Characteristics* IE indicates how the reporting of the dedicated measurement shall be performed. See also Annex B.

If the *Report Characteristics* IE is set to "On Demand" and if the *CFN* IE is not provided, the DRNS shall report the measurement result immediately in the DEDICATED MEASUREMENT INITIATION RESPONSE message. If the *CFN* IE is provided, it indicates the frame for which the measurement value shall be provided. The provided measurement value shall be the one reported by the layer 3 filter, referred to as point C in the measurement model [26].

If the *Report Characteristics* IE is set to "Periodic" and if the *CFN* IE is not provided, the DRNS shall immediately and periodically initiate the Dedicated Measurement Reporting procedure for this measurement, with a frequency as specified by the *Report Periodicity* IE. If the *CFN* IE is provided, the DRNS shall initiate a Dedicated Measurement Reporting procedure for this measurement at the CFN indicated in the *CFN* IE, and shall repeat this initiation periodically thereafter with a frequency as specified by the *Report Periodicity* IE. The provided measurement value shall be the one reported by the layer 3 filter, referred to as point C in the measurement model [26].

If the *Report Characteristics* IE is set to "Event A", the DRNS shall initiate the Dedicated Measurement Reporting procedure when the measured entity rises above the requested threshold, as specified by the *Measurement Threshold* IE, and then stays above the threshold for the requested hysteresis time, as specified by the *Measurement Hysteresis Time* IE. If the *Measurement Hysteresis Time* IE is not included, the DRNC shall use the value zero for the hysteresis time.

If the *Report Characteristics* IE is set to "Event B", the DRNS shall initiate the Dedicated Measurement Reporting procedure when the measured entity falls below the requested threshold, as specified by the *Measurement Threshold* IE, and then stays below the threshold for the requested hysteresis time, as specified by the *Measurement Hysteresis Time* IE. If the *Measurement Hysteresis Time* IE is not included, the DRNC shall use the value zero for the hysteresis time.

If the *Report Characteristics* IE is set to "Event C", the DRNS shall initiate the Dedicated Measurement Reporting procedure when the measured entity rises more than the requested threshold specified by the *Measurement Increase/Decrease Threshold* IE, and only when this rise occurs within the requested rising time specified by the *Measurement Change Time* IE. After reporting this type of event, DRNS shall not initiate the next C event reporting for the same measurement during the subsequent time specified by the *Measurement Change Time* IE.

If the *Report Characteristics* IE is set to "Event D", the DRNS shall initiate the Dedicated Measurement Reporting procedure when the measured entity falls more than the requested threshold specified by the *Measurement Increase/Decrease Threshold* IE, and only when this falls occurs within the requested falling time specified by the

*Measurement Change Time* IE. After reporting this type of event, the DRNS shall not initiate the next D event reporting for the same measurement during the subsequent time specified by the *Measurement Change Time* IE.

If the *Report Characteristics* IE is set to "Event E", the DRNS shall initiate the Dedicated Measurement Reporting procedure when the measured entity rises above the *Measurement Threshold 1* IE and stays above the threshold for the *Measurement Hysteresis Time* IE (Report A). When the conditions for Report A are met and if the *Report Periodicity* IE is provided, the DRNS shall initiate the Dedicated Measurement Reporting procedure periodically with the requested report frequency specified by the *Report Periodicity* IE. If the conditions for Report A have been met and the measured entity falls below the *Measurement Threshold 2* IE and stays below the threshold for the *Measurement Hysteresis Time* IE, the DRNS shall initiate the Dedicated Measurement Reporting procedure (Report B) and shall terminate any corresponding periodic reporting. If the *Measurement Threshold 2* IE is not present, the DRNS shall use the value of the *Measurement Threshold 1* IE instead. If the *Measurement Hysteresis Time* IE is not included, the DRNC shall use the value zero as hysteresis times for both Report A and Report B.

If the *Report Characteristics* IE is set to "Event F", the DRNS shall initiate the Dedicated Measurement Reporting procedure when the measured entity falls below the *Measurement Threshold 1* IE and stays below the threshold for the *Measurement Hysteresis Time* IE (Report A). When the conditions for Report A are met and if the *Report Periodicity* IE is provided, the DRNS shall initiate the Dedicated Measurement Reporting procedure periodically with the requested report frequency specified by the *Report Periodicity* IE. If the conditions for Report A have been met and the measured entity rises above the *Measurement Threshold 2* IE and stays above the threshold for the *Measurement Hysteresis Time* IE, the DRNS shall initiate the Dedicated Measurement Reporting procedure (Report B) and shall terminate any corresponding periodic reporting. If the *Measurement Threshold 2* IE is not present, the DRNS shall use the value of the *Measurement Threshold 1* IE instead. If the *Measurement Hysteresis Time* IE is not included, the DRNC shall use the value zero as hysteresis times for both Report A and Report B.

If the *Report Characteristics* IE is not set to "On –Demand", the DRNS is required to perform reporting for a dedicated measurement object, in accordance with the conditions provided in the DEDICATED MEASUREMENT INITIATION REQUEST message, as long as the object exists. If no dedicated measurement object(s) for which a measurement is defined exists any more, the DRNS shall terminate the measurement locally without reporting this to the SRNC.

If at the start of the measurement, the reporting criteria are fulfilled for any of Event A, Event B, Event E or Event F, the DRNS shall initiate the Dedicated Measurement Reporting procedure immediately, and then continue with the measurements as specified in the DEDICATED MEASUREMENT INITIATION REQUEST message.

### Higher layer filtering

The *Measurement Filter Coefficient* IE indicates how filtering of the dedicated measurement values shall be performed before measurement event evaluation and reporting.

The averaging shall be performed according to the following formula.

$$F_n = (1 - a) \cdot F_{n-1} + a \cdot M_n$$

The variables in the formula are defined as follows:

$F_n$  is the updated filtered measurement result

$F_{n-1}$  is the old filtered measurement result

$M_n$  is the latest received measurement result from physical layer measurements, the unit used for  $M_n$  is the same unit as the reported unit in the DEDICATED MEASUREMENT INITIATION RESPONSE, DEDICATED MEASUREMENT REPORT messages or the unit used in the event evaluation (i.e. same unit as for  $F_n$ ).

$a = 1/2^{(k/2)}$ , where  $k$  is the parameter received in the *Measurement Filter Coefficient* IE. If the *Measurement Filter Coefficient* IE is not present,  $a$  shall be set to 1 (no filtering)

In order to initialise the averaging filter,  $F_0$  is set to  $M_1$  when the first measurement result from the physical layer measurement is received.

### Measurement Recovery Behavior:

If the *Measurement Recovery Behavior* IE is included in the DEDICATED MEASUREMENT INITIATION REQUEST message, the DRNS shall, if Measurement Recovery Behavior is supported, include the *Measurement Recovery Support Indicator* IE in the DEDICATED MEASUREMENT INITIATION RESPONSE message and perform the Measurement Recovery Behavior as described in subclause 8.3.12.2.

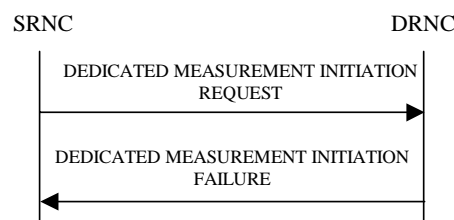
**Response message**

If the DRNS was able to initiate the measurement requested by the SRNS it shall respond with the DEDICATED MEASUREMENT INITIATION RESPONSE message. The message shall include the same Measurement ID that was used in the DEDICATED MEASUREMENT INITIATION REQUEST message.

In the case in which the *Report Characteristics* IE is set to "On Demand":

- The DRNC shall include the measurement result in the *Dedicated Measurement Value* IE within the DEDICATED MEASUREMENT INITIATION RESPONSE message.
- If the *CFN Reporting Indicator* IE is set to "FN Reporting Required", the *CFN* IE shall be included in the DEDICATED MEASUREMENT INITIATION RESPONSE message. The reported CFN shall be the CFN at the time when the dedicated measurement value was reported by the layer 3 filter, referred to as point C in the measurement model [26].
- [TDD - If the measurement was made on a particular DPCH, the DEDICATED MEASUREMENT INITIATION RESPONSE message shall include the DPCH ID of that DPCH in the *DPCH ID* IE.]
- [TDD - If the measurement was made on a particular HS-SICH, the DEDICATED MEASUREMENT INITIATION RESPONSE message shall include the ID of that HS-SICH in the *HS-SICH ID* IE.]

### 8.3.11.3 Unsuccessful Operation



**Figure 21: Dedicated Measurement Initiation procedure, Unsuccessful Operation**

If the requested measurement cannot be initiated for one of the RL/RLS, the DRNC shall send a DEDICATED MEASUREMENT INITIATION FAILURE message. The message shall include the same *Measurement ID* IE that was used in the DEDICATED MEASUREMENT INITIATION REQUEST message and shall include the *Cause* IE set to an appropriate value.

If the DEDICATED MEASUREMENT INITIATION REQUEST message includes the *Partial Reporting Indicator* IE, the DRNS shall, if partial reporting is supported, separate the unsuccessful measurement initiations from the successful measurement initiations. For the successful measurement initiations on a RL or an RLS, the DRNS shall include the *Successful RL Information* IE or the *Successful RL Set Information* IE for the concerned RL or RLS if the *Report Characteristics* IE in the DEDICATED MEASUREMENT INITIATION REQUEST message was set to "On Demand". For the unsuccessful measurement initiations, the DRNS shall include the *Individual Cause* IE set to an appropriate value if it differs from the value of the *Cause* IE.

Typical cause values are:

**Radio Network Layer Causes:**

- Measurement not Supported For The Object
- Measurement Temporarily not Available

**Miscellaneous Causes:**

- Control Processing Overload
- HW Failure

### 8.3.11.4 Abnormal Conditions

The allowed combinations of the Dedicated Measurement Type and Report Characteristics Type are shown in the table below marked with "X". For not allowed combinations, the DRNS shall reject the Dedicated Measurement Initiation procedure using the DEDICATED MEASUREMENT INITIATION FAILURE message.

**Table 4: Allowed Dedicated Measurement Type and Report Characteristics Type combinations**

Dedicated Measurement Type	Report Characteristics Type								
	On Demand	Periodic	Event A	Event B	Event C	Event D	Event E	Event F	On Modification
SIR	X	X	X	X	X	X	X	X	
SIR Error	X	X	X	X	X	X	X	X	
Transmitted Code Power	X	X	X	X	X	X	X	X	
RSCP	X	X	X	X	X	X	X	X	
Rx Timing Deviation	X	X	X	X			X	X	
Round Trip Time	X	X	X	X	X	X	X	X	
Rx Timing Deviation LCR	X	X	X	X			X	X	
HS-SICH Reception Quality	X	X	X	X			X	X	
Angle Of Arrival LCR	X	X							

If the Dedicated Measurement Type received in the *Dedicated Measurement Type* IE is not defined in ref. [11] or [14] to be measured on the Dedicated Measurement Object Type received in the DEDICATED MEASUREMENT INITIATION REQUEST message, the DRNS shall reject the Dedicated Measurement Initiation procedure.

If the *CFN* IE is included in the DEDICATED MEASUREMENT INITIATION REQUEST message and the *Report Characteristics* IE is other than "Periodic" or "On Demand", the DRNS shall reject the Dedicated Measurement Initiation procedure, and the DRNC shall send a DEDICATED MEASUREMENT INITIATION FAILURE message.

### 8.3.12 Dedicated Measurement Reporting

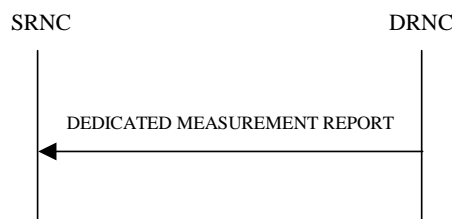
#### 8.3.12.1 General

This procedure is used by the DRNS to report the results of the successfully initiated measurements requested by the SRNS with the Dedicated Measurement Initiation procedure.

This procedure shall use the signalling bearer connection for the relevant UE Context.

The DRNC may initiate the Dedicated Measurement Reporting procedure at any time after establishing a Radio Link.

#### 8.3.12.2 Successful Operation



**Figure 22: Dedicated Measurement Reporting procedure, Successful Operation**



If the requested measurement reporting criteria are met, the DRNS shall initiate the Dedicated Measurement Reporting procedure. If the measurement was initiated (by the Dedicated Measurement Initiation procedure) for multiple dedicated measurement objects, the DRNC may include dedicated measurement values in the *Dedicated Measurement Value Information* IE for multiple objects in the DEDICATED MEASUREMENT REPORT message.

The *Measurement ID* IE shall be set to the Measurement ID provided by the SRNC when initiating the measurement with the Dedicated Measurement Initiation procedure.

If the achieved measurement accuracy does not fulfil the given accuracy requirement specified in ref. [23] and [24] or the measurement is temporarily not available in case Measurement Recovery Behavior is supported, the Measurement not available shall be reported in the *Dedicated Measurement Value Information* IE in the DEDICATED MEASUREMENT REPORT message, otherwise the DRNC shall include the *Dedicated Measurement Value* IE within the *Dedicated Measurement Value Information* IE. If the DRNC was configured to perform the Measurement Recovery Behavior, the DRNC shall indicate Measurement Available to the SRNC when the achieved measurement accuracy again fulfils the given accuracy requirement (see ref. [23] and [24]) and include the *Measurement Recovery Report Indicator* IE in the DEDICATED MEASUREMENT REPORT message if the requested measurement reporting criteria are not met.

If the CFN Reporting Indicator when initiating the measurement with the Dedicated Measurement Initiation procedure was set to "FN Reporting Required", the DRNC shall include the *CFN* IE in the DEDICATED MEASUREMENT REPORT message. The reported CFN shall be the CFN at the time when the dedicated measurement value was reported by the layer 3 filter, referred to as point C in the measurement model [26].

[TDD - If the measurement was made on a particular DPCH, the DEDICATED MEASUREMENT REPORT message shall include the DPCH ID of that DPCH in the *DPCH ID* IE.]

[TDD - If the measurement was made on a particular HS-SICH, the DEDICATED MEASUREMENT INITIATION RESPONSE message shall include the ID of that HS-SICH in the *HS-SICH ID* IE.]

### 8.3.12.3 Abnormal Conditions

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## 8.3.13 Dedicated Measurement Termination

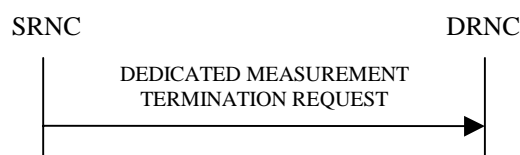
### 8.3.13.1 General

This procedure is used by the SRNS to terminate a measurement previously requested by the Dedicated Measurement Initiation procedure.

This procedure shall use the signalling bearer connection for the relevant UE Context.

The Dedicated Measurement Termination procedure shall not be initiated if a Prepared Reconfiguration exists, as defined in subclause 3.1.

### 8.3.13.2 Successful Operation



**Figure 23: Dedicated Measurement Termination procedure, Successful Operation**

This procedure is initiated with a DEDICATED MEASUREMENT TERMINATION REQUEST message, sent from the SRNC to the DRNC.

Upon receipt, the DRNS shall terminate reporting of dedicated measurements corresponding to the received *Measurement ID* IE.

### 8.3.13.3 Abnormal Conditions

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## 8.3.14 Dedicated Measurement Failure

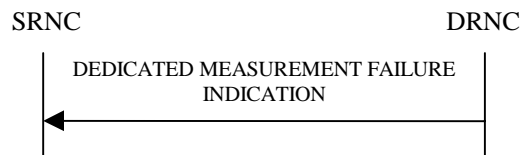
### 8.3.14.1 General

This procedure is used by the DRNS to notify the SRNS that a measurement previously requested by the Dedicated Measurement Initiation procedure can no longer be reported. When partial reporting is allowed and supported, this procedure shall be used to report that measurement for one or more RL/RLS can no longer be reported.

This procedure shall use the signalling bearer connection for the relevant UE Context.

The DRNC may initiate the Dedicated Measurement Failure procedure at any time after establishing a Radio Link.

### 8.3.14.2 Successful Operation



**Figure 24: Dedicated Measurement Failure procedure, Successful Operation**

This procedure is initiated with a DEDICATED MEASUREMENT FAILURE INDICATION message, sent from the DRNC to the SRNC, to inform the SRNC that a previously requested dedicated measurement can no longer be reported. The DRNC has locally terminated the indicated measurement. The DRNC shall include in the DEDICATED MEASUREMENT FAILURE INDICATION message the reason for the failure in the *Cause IE*.

The DRNS shall include *Unsuccessful RL Information IE* or the *Unsuccessful RL Set Information IE* for the concerned RL or RLS if partial reporting is allowed and it is supported. The DRNS shall include the *Individual Cause IE* set to an appropriate value if it differs from the value of the *Cause IE*.

Typical cause values are:

#### Miscellaneous Causes:

- Control Processing Overload
- HW Failure
- O&M Intervention

### 8.3.14.3 Abnormal Conditions

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## 8.3.15 Downlink Power Control [FDD]

### 8.3.15.1 General

The purpose of this procedure is to balance the DL transmission powers of one or more radio links for one UE.

This procedure shall use the signalling bearer connection for the relevant UE Context.

The Downlink Power Control procedure may be initiated by the SRNC at any time after establishing a Radio Link. If the SRNC has initiated in this DRNS the deletion of the last Radio Link for this UE context, the Downlink Power Control procedure shall not be initiated.

### 8.3.15.2 Successful Operation



**Figure 25: Downlink Power Control procedure, Successful Operation**

The Downlink Power Control procedure is initiated by the SRNC sending a DL POWER CONTROL REQUEST message to the DRNC.

The *Power Adjustment Type* IE defines the characteristic of the power adjustment.

If the value of the *Power Adjustment Type* IE is "Common", the DRNS shall set the Power Balancing Adjustment Type of the UE Context set to "Common". As long as the Power Balancing Adjustment Type of the UE Context is set to "Common", the DRNS shall perform the power adjustment (see below) for all existing and future radio links for the UE Context and use a common DL reference power level.

If the value of the *Power Adjustment Type* IE is "Individual", the DRNS shall set the Power Balancing Adjustment Type of the UE Context set to "Individual". The DRNS shall perform the power adjustment (see below) for all radio links addressed in the message using the given DL Reference Power per RL. If the Power Balancing Adjustment Type of the UE Context was set to "Common" before this message was received, power balancing on all radio links not addressed by the DL POWER CONTROL REQUEST message shall remain to be executed in accordance with the existing power balancing parameters which are now considered RL individual parameters. Power balancing will not be started on future radio links without a specific request.

If the value of the *Power Adjustment Type* IE is "None", the DRNS shall set the Power Balancing Adjustment Type of the UE Context set to "None" and the DRNS shall suspend on going power adjustments for all radio links for the UE Context.

If the *Inner Loop DL PC Status* IE is present and set to "Active", the DRNS shall activate inner loop DL power control for all radio links for the UE Context. If the *Inner Loop DL PC Status* IE is present and set to "Inactive", the DRNS shall deactivate inner loop DL power control for all radio links for the UE Context according to ref. [10].

#### Power Adjustment

The power balancing adjustment shall be superimposed on the inner loop power control adjustment (see ref. [10]) if activated. The power balancing adjustment shall be such that:

$$\sum P_{bal} = (1 - r)(P_{ref} + P_{P-CPICH} - P_{init}) \text{ with an accuracy of } \pm 0.5 \text{ dB}$$

where the sum is performed over an adjustment period corresponding to a number of frames equal to the value of the *Adjustment Period* IE,  $P_{ref}$  is the value of the *DL Reference Power* IE,  $P_{P-CPICH}$  is the power used on the primary CPICH,  $P_{init}$  is the code power of the last slot of the previous adjustment period and  $r$  is given by the *Adjustment Ratio* IE. If the last slot of the previous adjustment period is within a transmission gap due to compressed mode,  $P_{init}$  shall be set to the same value as the code power of the slot just before the transmission gap.

The adjustment within one adjustment period shall in any case be performed with the constraints given by the *Max Adjustment Step* IE and the DL TX power range set by the DRNC.

The power adjustments shall be started at the first slot of a frame with CFN modulo the value of *Adjustment Period* IE equal to 0 and shall be repeated for every adjustment period and shall be restarted at the first slot of a frame with CFN=0, until a new DL POWER CONTROL REQUEST message is received or the RL is deleted.

### 8.3.15.3 Abnormal Conditions

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## 8.3.16 Compressed Mode Command [FDD]

### 8.3.16.1 General

The Compressed Mode Command procedure is used to activate or deactivate the compressed mode in the DRNS for one UE-UTRAN connection. This procedure shall use the signalling bearer connection for the relevant UE Context.

The Compressed Mode Command procedure shall not be initiated if a Prepared Reconfiguration exists, as defined in subclause 3.1.

### 8.3.16.2 Successful Operation



**Figure 26: Compressed Mode Command procedure, Successful Operation**

The procedure is initiated by the SRNC sending a COMPRESSED MODE COMMAND message to the DRNC.

Upon receipt of the COMPRESSED MODE COMMAND message from the SRNC and at the CFN indicated in the *CM Configuration Change CFN* IE, the DRNS shall deactivate all the ongoing Transmission Gap Pattern Sequences. From that moment on all Transmission Gap Pattern Sequences included in *Transmission Gap Pattern Sequence Status* IE repetitions (if present) shall be started when the indicated *TGCFN* IE elapses. The *CM Configuration Change CFN* IE in the *Active Pattern Sequence Information* IE and *TGCFN* IE for each sequence refer to the next coming CFN with that value.

If the values of the *CM Configuration Change CFN* IE and the *TGCFN* IE are equal, the concerned Transmission Gap Pattern Sequence shall be started immediately at the CFN with a value equal to the value received in the *CM Configuration Change CFN* IE.

### 8.3.16.3 Abnormal Conditions

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## 8.3.17 Downlink Power Timeslot Control [TDD]

### 8.3.17.1 General

The purpose of this procedure is to provide the DRNS with updated DL Timeslot ISCP values to use when deciding the DL TX Power for each timeslot.

This procedure shall use the signalling bearer connection for the relevant UE Context.

The Downlink Power Timeslot Control procedure can be initiated by the SRNC at any time after establishing a Radio Link. If the SRNC has initiated deletion of the last Radio Link in this DRNS, the Downlink Power Timeslot Control procedure shall not be initiated.

### 8.3.17.2 Successful Operation



**Figure 26A: Downlink Power Timeslot Control procedure, Successful Operation**

The Downlink Power Timeslot Control procedure is initiated by the SRNC sending a DL POWER TIMESLOT CONTROL REQUEST message to the DRNC.

Upon receipt of the DL POWER TIMESLOT CONTROL REQUEST message, the DRNS shall use the included [3.84Mcps TDD - *DL Timeslot ISCP Info* IE] [1.28Mcps TDD - *DL Timeslot ISCP Info LCR* IE] value when deciding the DL TX Power for each timeslot as specified in [22], i.e. it shall reduce the DL TX power in those downlink timeslots of the radio link in which the interference is low, and increase the DL TX power in those timeslots in which the interference is high, while keeping the total downlink power in the radio link unchanged.

If the *Primary CCPCH RSCP Delta* IE is included, the DRNS shall assume that the reported value for Primary CCPCH RSCP is in the negative range as per [24], and the value is equal to the *Primary CCPCH RSCP Delta* IE. If the *Primary CCPCH RSCP Delta* IE is not included and the *Primary CCPCH RSCP* IE is included, the DRNS shall assume that the reported value is in the non-negative range as per [24], and the value is equal to the *Primary CCPCH RSCP* IE. The DRNS should use the indicated value for HS-DSCH scheduling and transmit power adjustment.

### 8.3.17.3 Abnormal Conditions

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## 8.3.18 Radio Link Pre-emption

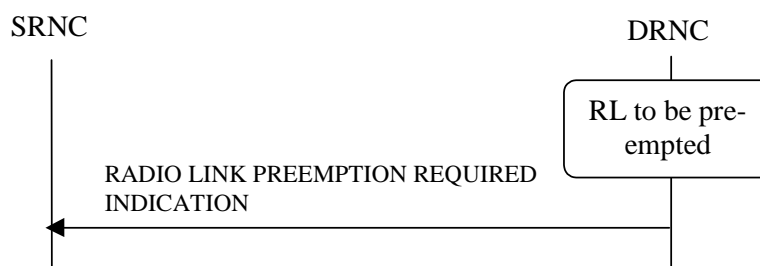
### 8.3.18.1 General

This procedure is started by the DRNS when resources need to be freed.

This procedure shall use the signalling bearer connection for the UE Context associated with the RL to be pre-empted.

The DRNS may initiate the Radio Link Pre-emption procedure at any time after establishing a Radio Link.

### 8.3.18.2 Successful Operation



**Figure 26B: Radio Link Pre-emption procedure, Successful Operation**

When DRNC detects that one or more Radio Link(s) should be pre-empted (see Annex A), it shall send the RADIO LINK PREEMPTION REQUIRED INDICATION message to the SRNC. If all Radio Links for a UE Context should be pre-empted, the *RL Information* IE shall not be included in the message. If one or several but not all Radio Link(s) should be pre-empted for an UE Context, the Radio Link(s) that should be pre-empted shall be indicated in the *RL Information* IE. The Radio Link(s) that should be pre-empted, should be deleted by the SRNC.

[\[FDD – If only the E-DCH traffic on a Radio Link should be pre-empted, the DRNC shall indicate the EDCH MAC-d flows that should be pre-empted by including the E-DCH MAC-d Flow Specific Information IE in the RADIO LINK PREEMPTION REQUIRED INDICATION message.\]](#)

When only the HS-DSCH traffic on a Radio Link should be pre-empted, the DRNC shall indicate the HS-DSCH MAC-d flow(s) that should be pre-empted by including the *HS-DSCH MAC-d Flow Specific Information IE* in the RADIO LINK PREEMPTION REQUIRED INDICATION message.

### 8.3.18.3 Abnormal Conditions

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## 8.3.19 Radio Link Congestion

### 8.3.19.1 General

This procedure is started by the DRNS when resource congestion is detected and the rate of one or more DCHs, corresponding to one or more radio links, is preferred to be limited in the UL and/or DL. This procedure is also used by the DRNC to indicate to the SRNC any change of the UL/DL resource congestion situation, affecting these radio links. This procedure shall use the signalling bearer connection for the relevant UE Context.

The Radio Link Congestion procedure shall not be initiated if a Prepared Reconfiguration exists, as defined in subclause 3.1.

### 8.3.19.2 Successful Operation



**Figure 26C: Radio Link Congestion procedure, Successful Operation**

#### Start of an UL/DL Resource Congestion Situation

When the DRNC detects the start of a UL/DL resource congestion situation and prefers the rate of one or more DCHs for one or more Radio Link(s) to be limited below the maximum rate currently configured in the UL/DL TFS, it shall send the RADIO LINK CONGESTION INDICATION message to the SRNC. The DRNC shall indicate the cause of the congestion in the *Congestion Cause IE* and shall indicate all the Radio Links for which the rate of a DCH needs to be reduced. For each DCH within the RL with UL congestion, the DRNC shall indicate the desired maximum UL data rate with the *Allowed UL Rate IE* in the *Allowed Rate Information IE*. For each DCH within the RL with DL congestion, the DRNC shall indicate the desired maximum DL data rate with the *Allowed DL Rate IE* in the *Allowed Rate Information IE*.

[\[FDD – For each E-DCH MAC-d flow within the RL with UL congestion, the DRNC shall indicate all the MAC-d flows for which the rate cannot be fulfilled.\]](#)

When receiving the RADIO LINK CONGESTION INDICATION message the SRNC should reduce the rate in accordance with the *Congestion Cause IE* and the indicated *Allowed DL Rate IE* and/or *Allowed UL Rate IE* for a DCH.

#### Change of UL/DL Resource Congestion Situation

The DRNC shall indicate any change of the UL/DL resource congestion situation by sending the RADIO LINK CONGESTION INDICATION message in which the new allowed rate(s) of the DCHs are indicated by the *Allowed Rate Information IE*. In the case that for at least one DCH the new allowed rate is lower than the previously indicated allowed rate for that DCH, the *Congestion Cause IE*, indicating the cause of the congestion, shall also be included.

When receiving a RADIO LINK CONGESTION INDICATION message indicating a further rate decrease on any DCH(s) on any RL, the SRNC should reduce the rate in accordance with the indicated congestion cause and the indicated allowed rate(s) for the DCH(s).

### End of UL/DL Resource Congestion Situation

The end of an UL resource congestion situation, affecting a specific RL, shall be indicated by including the TF corresponding to the highest data rate in the *Allowed UL Rate IE* in the *Allowed Rate Information IE* for the concerned RL. The end of a DL resource congestion situation, affecting a specific RL, shall be indicated by including the TF with the highest data rate in the *Allowed DL Rate IE* in the *Allowed Rate Information IE* for the concerned RL.

#### 8.3.19.3 Abnormal Conditions

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### 8.3.20 Radio Link Activation

#### 8.3.20.1 General

This procedure is used to activate or de-activate the DL transmission on the Uu interface regarding selected RLs.

#### 8.3.20.2 Successful Operation



**Figure 26D: Radio Link Activation procedure**

This procedure is initiated by sending the RADIO LINK ACTIVATION COMMAND message from the SRNC to the DRNC. This procedure shall use the signalling bearer connection for the relevant UE Context.

Upon receipt, the DRNS shall for each concerned RL:

- if the *Delayed Activation Update IE* indicates "Activate":
  - if the *Activation Type IE* equals "Unsynchronised":
    - [FDD - start transmission on the new RL after synchronisation is achieved in the DL user plane as specified in [4].]
    - [TDD - start transmission on the new RL immediately as specified in [4].]
  - if the *Activation Type IE* equals "Synchronised":
    - [FDD - start transmission on the new RL after synchronisation is achieved in the DL user plane as specified in [4], however never before the CFN indicated in the *Activation CFN IE*.]
    - [TDD - start transmission on the new RL at the CFN indicated in the *Activation CFN IE* as specified in [4].]
- [FDD - the DRNS shall apply the power level indicated in the *Initial DL Tx Power IE* to the transmission on each DL DPCH of the RL when starting transmission until either UL synchronisation on the Uu interface is achieved for the RLS or power balancing is activated. During this period no inner loop power control shall be performed and, unless activated by the DL POWER CONTROL REQUEST message, no power balancing shall be performed. The DL power shall then vary according to the inner loop power control (see ref.[10], subclause 5.2.1.2) and downlink power balancing adjustments (see 8.3.7).]
- [TDD - the DRNS shall apply the power level indicated in the *Initial DL Tx Power IE* to the transmission on each DL DPCH and on each Time Slot of the RL when starting transmission until the UL synchronisation on

the Uu interface is achieved for the RL. No inner loop power control shall be performed during this period. The DL power shall then vary according to the inner loop power control (see ref.[22], subclause 4.2.3.3.)

- [FDD - if the *Propagation Delay* IE is included, the DRNS may use this information to speed up the detection of UL synchronisation on the Uu interface.]
- [FDD - if the *First RLS Indicator* IE is included, it indicates if the concerned RL shall be considered part of the first RLS established towards this UE. The *First RLS Indicator* IE shall be used by the DRNS to determine the initial TPC pattern in the DL of the concerned RL and all RLs which are part of the same RLS, as described in [10], section 5.1.2.2.1.2.]
- if the *Delayed Activation Update* IE indicates "Deactivate":
  - stop DL transmission immediately if the Deactivation Type IE equals "Unsynchronised", or at the CFN indicated by the Deactivation CFN IE if the Deactivation Type IE equals "Synchronised".

### 8.3.20.3 Abnormal Conditions

[FDD - If the *Delayed Activation Update* IE is included in the RADIO LINK ACTIVATION COMMAND message, it indicates "Activate" and the *First RLS Indicator* IE is not included, the DRNC shall initiate the ERROR INDICATION procedure.]

## 8.3.21 Radio Link Parameter Update

### 8.3.21.1 General

The Radio Link Parameter Update procedure is executed by the DRNS to update parameters related to HS-DSCH on a radio link for a UE-UTRAN connection or to update phase reference on a list of the radio links.

This procedure shall use the signalling bearer connection for the relevant UE context.

The Radio Link Parameter Update procedure shall not be initiated if a Prepared Reconfiguration exists, as defined in subclause 3.1.

### 8.3.21.2 Successful Operation



**Figure 26E: Radio Link Parameter Update Indication, Successful Operation**

The Radio Link Parameter Update procedure is initiated by the DRNS by sending the RADIO LINK PARAMETER UPDATE INDICATION message to the SRNC.

#### **HS-DSCH related Parameter(s) Updating:**

If RADIO LINK PARAMETER UPDATE INDICATION message is used to update the parameters related to HS-DSCH, it contains suggested value(s) of the HS-DSCH related parameter(s) that should be reconfigured on the radio link.

If the DRNS needs to update HS-DSCH related parameters, the DRNS shall initiate RADIO LINK PARAMETER UPDATE INDICATION message including [FDD - *HS-DSCH FDD Update Information* IE] [TDD - *HS-DSCH TDD Update Information* IE].



If the DRNS needs to allocate new HS-SCCH Codes, the DRNS shall initiate RADIO LINK PARAMETER UPDATE INDICATION message including *HS-SCCH Code Change Indicator* IE.

[FDD - If the DRNS needs to update the CQI Feedback Cycle  $k$ , CQI Repetition Factor, ACK-NACK Repetition Factor, CQI Power Offset, ACK Power Offset and/or NACK Power Offset, the DRNS shall initiate RADIO LINK PARAMETER UPDATE INDICATION message including *CQI Feedback Cycle  $k$*  IE, *CQI Repetition Factor* IE, *ACK-NACK Repetition Factor* IE, *CQI Power Offset* IE, *ACK Power Offset* IE and/or *NACK Power Offset* IE.]

[TDD - If the DRNS needs to update the TDD ACK-NACK Power Offset the DRNS shall initiate RADIO LINK PARAMETER UPDATE INDICATION message including *TDD ACK-NACK Power Offset* IE.]

**[FDD – Phase Reference Handling]:**

[FDD – If DRNS needs to update phase reference for the channel estimation for one or several Radio Links, the DRNC shall initiate RADIO LINK PARAMETER UPDATE INDICATION message including *Phase Reference Update Information* IE for the concerned RL(s).]

**[FDD – E-DCH Handling]:**

[FDD – If DRNS needs to update E-DCH related parameters, the DRNC shall initiate RADIO LINK PARAMETER UPDATE INDICATION message including *E-DCH FDD Update Information* IE.]

### 8.3.21.3 Abnormal Conditions

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## 8.3.22 UE Measurement Initiation [TDD]

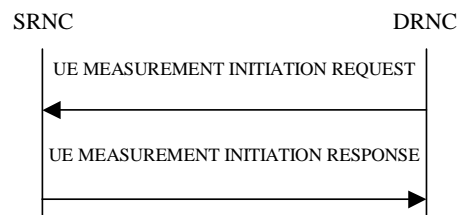
### 8.3.22.1 General

This procedure is used by a DRNC to request the initiation of UE measurements by the SRNC.

This procedure shall use the signalling bearer connection for the relevant UE Context.

The UE Measurement Initiation procedure shall not be initiated if a Prepared Reconfiguration exists, as defined in subclause 3.1.

### 8.3.22.2 Successful Operation



**Figure 26F: UE Measurement Initiation procedure, Successful Operation**

The procedure is initiated with a UE MEASUREMENT INITIATION REQUEST message sent from the DRNC to the SRNC.

Upon receipt the SRNC shall, provided that it determines that the measurement can be performed by the UE, initiate and forward the requested UE measurement according to the parameters given in the UE MEASUREMENT INITIATION REQUEST message. If the UE MEASUREMENT INITIATION REQUEST message includes the *UE Measurement Parameter Modification Allowed* IE with a value of “Parameter Modification Allowed” the *UE Measurement Report Characteristics* IE and the *Measurement Filter Coefficient* IE, if it is included, are suggested values, otherwise the values of these parameters must be fulfilled.

[3.84 Mcps TDD - If the *UE Measurement Timeslot Information HCR* IE is provided, the measurement request shall apply for the requested timeslot(s) individually. If the *UE Measurement Timeslot Information HCR* IE are not provided the SRNC may choose the timeslots for measurements that apply to individual timeslots.]

[1.28 Mcps TDD – If the *UE Measurement Timeslot Information LCR* IE is provided, the measurement request shall apply for the requested timeslot(s) individually. If the *UE Measurement Timeslot Information LCR* IE are not provided the SRNC may choose the timeslots for measurements that apply to individual timeslots.]

If the UE MEASUREMENT INITIATION REQUEST message includes the *Allowed Queuing Time* IE the SRNC may queue the request for a time period not to exceed the value of the *Allowed Queuing Time* IE before starting to execute the request.

The SRNC is required to perform reporting for a UE measurement object, in accordance with the conditions provided in the UE MEASUREMENT INITIATION REQUEST message, as long as the object exists. If no UE measurement object(s) for which a measurement is defined exists any more, the SRNC shall terminate the measurement locally without reporting this to the DRNC.

If at the start of the measurement, the reporting criteria are fulfilled for any of Event 1h, Event 1i, Event 6a, Event 6b, Event 6c, or Event 6d, the SRNC shall initiate the UE Measurement Reporting procedure immediately, and then continue with the measurements as specified in the UE MEASUREMENT INITIATION REQUEST message

At the start of a periodic measurement, the SRNC shall not initiate UE Measurement Reporting procedure until the next measurement is received from the UE, even if measurement data is available.

#### Report characteristics

The *UE Measurement Report Characteristics* IE indicates how the reporting of the dedicated measurement shall be performed. See [16].

#### Higher layer filtering

The *Measurement Filter Coefficient* IE indicates how filtering of the dedicated measurement values shall be performed before measurement event evaluation and reporting. If the *Measurement Filter Coefficient* IE is not present, *a* shall be set to 1 (no filtering). The use of the *Measurement Filter Coefficient* IE is shown in [16].

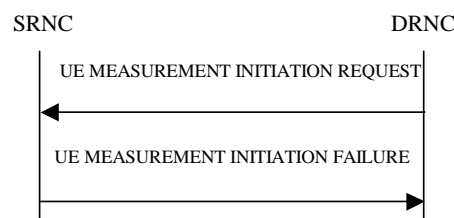
#### Response message

If the SRNC was able to initiate the measurement requested by the DRNC it shall respond with the UE MEASUREMENT INITIATION RESPONSE message. The message shall include the same Measurement ID that was used in the UE MEASUREMENT INITIATION REQUEST message.

If the DRNC allowed parameter modification and the SRNC modified the *Measurement Filter Coefficient* IE the SRNC shall include the modified value in the UE MEASUREMENT INITIATION RESPONSE message.

If the DRNC allowed parameter modification and the SRNC modified the *UE Measurement Report Characteristics* IE the SRNC shall include the modified value in the UE MEASUREMENT INITIATION RESPONSE message.

### 8.3.22.3 Unsuccessful Operation



**Figure 26G: UE Measurement Initiation procedure, Unsuccessful Operation**

If the requested measurement cannot be initiated, the SRNC shall send a UE MEASUREMENT INITIATION FAILURE message. The message shall include the same *Measurement ID* IE that was used in the UE MEASUREMENT INITIATION REQUEST message and shall include the *Cause* IE set to an appropriate value.

Typical cause values are:

**Radio Network Layer Causes:**

- Measurement not Supported For The Object
- Measurement Temporarily not Available
- Measurement Repetition Rate not Compatible with Current Measurements
- UE not Capable to Implement Measurement

**Miscellaneous Causes:**

- Control Processing Overload
- HW Failure

**8.3.22.4 Abnormal Conditions**

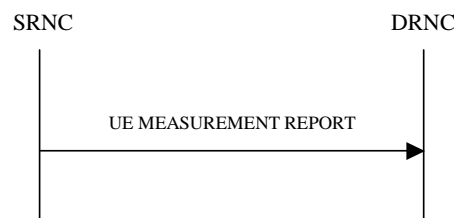
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**8.3.23 UE Measurement Reporting [TDD]****8.3.23.1 General**

This procedure is used by the SRNC to report the results of the successfully initiated measurements requested by the DRNC with the UE Measurement Initiation procedure.

This procedure shall use the signalling bearer connection for the relevant UE Context.

The SRNC may initiate the UE Measurement Reporting procedure at any time after establishing a Radio Link.

**8.3.23.2 Successful Operation**

**Figure 26H: UE Measurement Reporting procedure, Successful Operation**

If the requested measurement reporting criteria was met in the UE and reported to the SRNC, the SRNC shall initiate the UE Measurement Reporting procedure. The *Measurement ID* IE shall be set to the Measurement ID provided by the DRNC when initiating the measurement with the UE Measurement Initiation procedure.

If Primary CCPCH RSCP is being reported:

- If the *Primary CCPCH RSCP Delta* IE is included, the DRNC shall assume that the reported value for Primary CCPCH RSCP is in the negative range as per [24], and the value is equal to the *Primary CCPCH RSCP Delta* IE.
- If the *Primary CCPCH RSCP Delta* IE is not included the DRNC shall assume that the reported value is in the non negative range as per [24], and the value is equal to the *Primary CCPCH RSCP* IE

If the achieved measurement accuracy does not fulfil the given accuracy requirement specified in ref. [24], the Measurement not available shall be reported in the *UE Measurement Value Information* IE in the UE MEASUREMENT REPORT message, otherwise the SRNC shall include the *UE Measurement Value* IE within the *UE Measurement Value Information* IE.

### 8.3.23.3 Abnormal Conditions

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## 8.3.24 UE Measurement Termination [TDD]

### 8.3.24.1 General

This procedure is used by the DRNC to terminate a measurement previously requested by the UE Measurement Initiation procedure.

This procedure shall use the signalling bearer connection for the relevant UE Context.

The UE Measurement Termination procedure shall not be initiated if a Prepared Reconfiguration exists, as defined in subclause 3.1.

### 8.3.24.2 Successful Operation



**Figure 26I: UE Measurement Termination procedure, Successful Operation**

This procedure is initiated with a UE MEASUREMENT TERMINATION REQUEST message, sent from the DRNC to the SRNC.

Upon receipt, the SRNC shall terminate forwarding of UE measurements corresponding to the received *Measurement ID* IE.

### 8.3.24.3 Abnormal Conditions

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## 8.3.25 UE Measurement Failure [TDD]

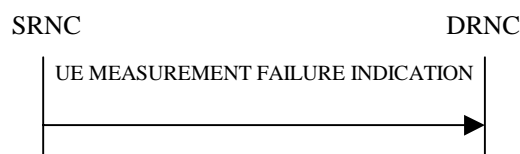
### 8.3.25.1 General

This procedure is used by the SRNC to notify the DRNC that a measurement previously requested by the UE Measurement Initiation procedure can no longer be reported.

This procedure shall use the signalling bearer connection for the relevant UE Context.

The SRNC may initiate the UE Measurement Failure procedure at any time after establishing a Radio Link.

### 8.3.25.2 Successful Operation



**Figure 26J: UE Measurement Failure procedure, Successful Operation**

This procedure is initiated with a UE MEASUREMENT FAILURE INDICATION message, sent from the SRNC to the DRNC, to inform the DRNC that a previously requested UE measurement can no longer be reported. The SRNC has

locally terminated the forwarding of the indicated measurement. The SRNC shall include in the UE MEASUREMENT FAILURE INDICATION message the reason for the failure in the *Cause IE*.

Typical cause values are:

**Miscellaneous Causes:**

- Control Processing Overload
- HW Failure
- O&M Intervention

### 8.3.25.3 Abnormal Conditions

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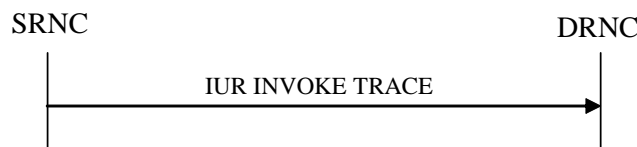
## 8.3.26 Iur Invoke Trace

### 8.3.26.1 General

The purpose of the Iur Invoke Trace procedure is to inform the DRNC that it should begin a Trace Session for a given UE Context according to the Trace Parameters indicated by the SRNC. This procedure is used for Trace Parameter Propagation in the Signalling Based Activation mechanism as defined in [48] and [49].

This procedure shall use the signalling bearer mode specified below.

### 8.3.26.2 Successful Operation



**Figure 26K: Iur Invoke Trace procedure, Successful Operation**

The Iur Invoke Trace procedure is invoked by the SRNC by sending an IUR INVOKE TRACE message to the DRNC.

When the concerned UE is utilising one or more radio links in the DRNC the message shall be sent using the connection oriented service of the signalling bearer and no further identification of the UE Context in the DRNC is required. If on the other hand, the UE is not utilising any radio link the message shall be sent using the connectionless service of the signalling bearer and the *D-RNTI IE* shall be included in the message to identify the UE Context in the DRNC.

Upon receiving the IUR INVOKE TRACE message, the DRNC should begin a Trace Recording Session according to the parameters indicated in the IUR INVOKE TRACE message.

If the *List Of Interfaces To Trace IE* is included in the IUR INVOKE TRACE message, the DRNC shall trace, for the concerned UE Context, the interfaces indicated by the *List Of Interfaces To Trace IE*. Otherwise, the DRNC shall trace, for the concerned UE Context, the Iur and Iub interfaces.

The values of the *UE Identity IE*, *Trace Reference IE* and *Trace Recording Session Reference IE* are used to tag the Trace Record to allow simpler construction of the total record by the entity which combines Trace Records.

If the DRNC does not support the requested value "Minimum" or "Medium" of the *Trace Depth IE*, the DRNC should begin a Trace Recording Session with maximum Trace Depth.

The DRNC may not start a Trace Recording Session if there are insufficient resources available within the DRNC.

### 8.3.26.3 Abnormal Conditions

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## 8.3.27 Iur Deactivate Trace

### 8.3.27.1 General

The purpose of the Iur Deactivate Trace procedure is to inform the DRNC that it should stop a Trace Session for the concerned UE Context and the indicated Trace Reference. This procedure is used for the Signalling Based Deactivation mechanism as defined in [48] and [49].

This procedure shall use the signalling bearer mode specified below.

### 8.3.27.2 Successful Operation



**Figure 26L: Iur Invoke Trace procedure, Successful Operation**

The Iur Deactivate Trace procedure is invoked by the SRNC by sending an IUR DEACTIVATE TRACE message to the DRNC.

When the concerned UE is utilising one or more radio links in the DRNC the message shall be sent using the connection oriented service of the signalling bearer and no further identification of the UE Context in the DRNC is required. If on the other hand, the UE is not utilising any radio link the message shall be sent using the connectionless service of the signalling bearer and the *D-RNTI* IE shall be included in the message to identify the UE Context in the DRNC.

Upon receiving the IUR DEACTIVATE TRACE message, the DRNC shall stop for the concerned UE Context any ongoing Trace Recording Session for the Trace Session identified by the *Trace Reference* IE.

### 8.3.27.3 Abnormal Conditions

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## 8.4 Common Transport Channel Procedures

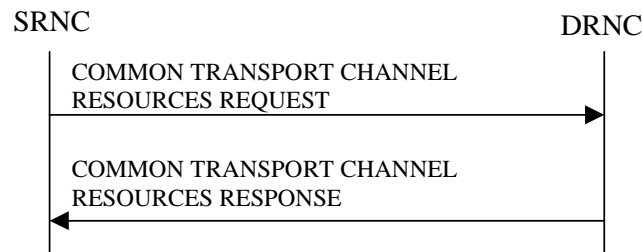
### 8.4.1 Common Transport Channel Resources Initialisation

#### 8.4.1.1 General

The Common Transport Channel Resources Initialisation procedure is used by the SRNC for the initialisation of the Common Transport Channel user plane towards the DRNC and/or for the initialisation of the Common Transport Channel resources in the DRNC to be used by a UE.

This procedure shall use the connectionless mode of the signalling bearer.

### 8.4.1.2 Successful Operation



**Figure 27: Common Transport Channel Resources Initialisation procedure, Successful Operation**

The SRNC initiates the procedure by sending the message COMMON TRANSPORT CHANNEL RESOURCES REQUEST message to the DRNC.

If the value of the *Transport Bearer Request Indicator* IE is set to "Bearer Requested", the DRNC shall store the received *Transport Bearer ID* IE. The DRNC may use the *Transport Layer Address* and *Binding ID* IEs included in the COMMON TRANSPORT CHANNEL RESOURCES REQUEST message received from the SRNC when establishing a transport bearer for the common transport channel. In addition, the DRNC shall include its own *Binding ID* IE and *Transport Layer Address* IE in the COMMON TRANSPORT CHANNEL RESOURCES RESPONSE message.

If the value of the *Transport Bearer Request Indicator* IE is set to "Bearer not Requested", the DRNC shall use the transport bearer indicated by the *Transport Bearer ID* IE.

If the *C-ID* IE is included in the COMMON TRANSPORT CHANNEL RESOURCES REQUEST message, the DRNC shall allocate a C-RNTI for the indicated cell and include the *C-RNTI* IE in the COMMON TRANSPORT CHANNEL RESOURCES RESPONSE message.

If the *C-ID* IE is included in the COMMON TRANSPORT CHANNEL RESOURCES REQUEST message, the DRNC shall include the *FACH Info for UE Selected S-CCPCH* IE valid for the cell indicated by the *C-ID* IE and the corresponding *C-ID* IE in the COMMON TRANSPORT CHANNEL RESOURCES RESPONSE message. If the *C-ID* IE is not included in the COMMON TRANSPORT CHANNEL RESOURCES REQUEST message, the DRNC shall include the *FACH Info for UE Selected S-CCPCH* IE valid for the cell where the UE is located and the corresponding *C-ID* IE. The DRNC shall include the *FACH Scheduling Priority* IE and *FACH Initial Window Size* IE in the *FACH Flow Control Information* IE of the *FACH Info for UE Selected S-CCPCH* IE for each priority class that the DRNC has determined shall be used. The DRNC may include several *MAC-c/sh SDU Length* IEs for each priority class.

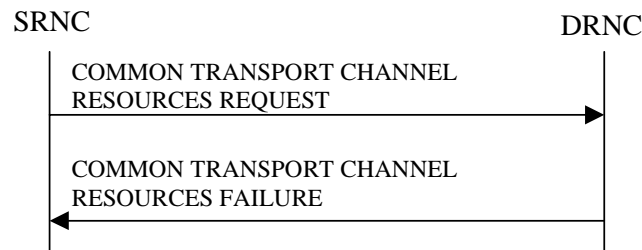
If the DRNS has any RACH, [FDD - CPCH,] and/or FACH resources previously allocated for the UE in another cell than the cell in which resources are currently being allocated, the DRNS shall release the previously allocated RACH, [FDD - CPCH,] and/or FACH resources.

If the DRNS has successfully reserved the required resources, the DRNC shall respond to the SRNC with the COMMON TRANSPORT CHANNEL RESOURCES RESPONSE message.

If the *Permanent NAS UE Identity* IE is present in the COMMON TRANSPORT CHANNEL RESOURCES REQUEST message, the DRNS shall store the information for the considered UE Context for the lifetime of the UE Context.

If the COMMON TRANSPORT CHANNEL RESOURCES REQUEST message includes a *C-ID* IE corresponding to a cell reserved for operator use and the Permanent NAS UE Identity is available in the DRNC for the considered UE Context, the DRNC shall use this information to determine whether it can reserve resources on a common transport channel in this cell or not.

### 8.4.1.3 Unsuccessful Operation



**Figure 28: Common Transport Channel Resources Initialisation procedure, Unsuccessful Operation**

If the *Transport Bearer Request Indicator* IE is set to "Bearer Requested" and the DRNC is not able to provide a Transport Bearer, the DRNC shall reject the procedure and respond to the SRNC with the COMMON TRANSPORT CHANNEL RESOURCES FAILURE message, including the reason for the failure in the *Cause* IE.

If the COMMON TRANSPORT CHANNEL RESOURCES REQUEST message contains a *C-ID* IE corresponding to a cell reserved for operator use and the Permanent NAS UE Identity is not available for the considered UE Context, the DRNC shall reject the procedure and send the COMMON TRANSPORT CHANNEL RESOURCES FAILURE message, including the reason for the failure in the *Cause* IE.

Typical cause values are:

**Radio Network Layer Causes:**

- Common Transport Channel Type not Supported;
- Cell reserved for operator use.

**Transport Layer Causes:**

- Transport Resource Unavailable.

### 8.4.1.4 Abnormal Conditions

If the COMMON TRANSPORT CHANNEL RESOURCES REQUEST message contains the *Transport Layer Address* IE or the *Binding ID* IE, and not both are present for a transport channel intended to be established, the DRNC shall reject the procedure using the COMMON TRANSPORT CHANNEL RESOURCES FAILURE message.

## 8.4.2 Common Transport Channel Resources Release

### 8.4.2.1 General

This procedure is used by the SRNC to request release of Common Transport Channel Resources for a given UE in the DRNS. The SRNC uses this procedure either to release the UE Context from the DRNC (and thus both the D-RNTI and the C-RNTI) or to release only the C-RNTI.

This procedure shall use the connectionless mode of the signalling bearer.

### 8.4.2.2 Successful Operation



**Figure 29: Common Transport Channel Resources Release procedure, Successful Operation**



The SRNC initiates the Common Transport Channel Resources Release procedure by sending the COMMON TRANSPORT CHANNEL RESOURCES RELEASE REQUEST message to the DRNC. Upon receipt of the message the DRNC shall release the UE Context identified by the D-RNTI and all its related RACH, [FDD - CPCH,] and/or FACH resources, unless the UE is using dedicated resources (DCH, [TDD - USCH,] and/or DSCH) in the DRNS in which case the DRNC shall release only the C-RNTI and all its related RACH, [FDD - CPCH,] and/or FACH resources allocated for the UE.

### 8.4.2.3 Abnormal Conditions

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## 8.5 Global Procedures

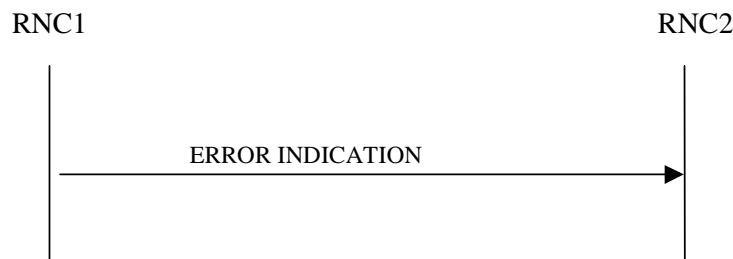
### 8.5.1 Error Indication

#### 8.5.1.1 General

The Error Indication procedure is initiated by a node to report detected errors in a received message, provided they cannot be reported by an appropriate response message.

This procedure shall use the signalling bearer mode specified below.

#### 8.5.1.2 Successful Operation



**Figure 30: Error Indication procedure, Successful Operation**

When the conditions defined in clause 10 are fulfilled, the Error Indication procedure is initiated by an ERROR INDICATION message sent from the receiving node. This message shall use the same mode of the signalling bearer and the same signalling bearer connection (if connection oriented) as the message that triggers the procedure.

When the ERROR INDICATION message is sent from a DRNC to an SRNC using connectionless mode of the signalling bearer, the *S-RNTI* IE shall be included in the message if the UE Context addressed by the *D-RNTI* IE which was received in the message triggering the Error Indication procedure exists. When the ERROR INDICATION message is sent from an SRNC to a DRNC using connectionless mode of the signalling bearer, the *D-RNTI* IE shall be included in the message if available.

When a message using connectionless mode of the signalling bearer is received in the DRNC and there is no UE Context in the DRNC as indicated by the *D-RNTI* IE, the DRNC shall include the D-RNTI from the received message in the *D-RNTI* IE and set the *Cause* IE to "Unknown RNTI" in the ERROR INDICATION message, unless another handling is specified in the procedure text for the affected procedure.

When a message using connectionless mode of the signalling bearer is received in the SRNC and there is no UE in the SRNC as indicated by the *S-RNTI* IE, the SRNC shall include the S-RNTI from the received message in the *S-RNTI* IE and set the *Cause* IE to "Unknown RNTI" in the ERROR INDICATION message, unless another handling is specified in the procedure text for the affected procedure.

The ERROR INDICATION message shall include either the *Cause* IE, or the *Criticality Diagnostics* IE, or both the *Cause* IE and the *Criticality Diagnostics* IE to indicate the reason for the error indication.

Typical cause values for the ERROR INDICATION message are:

**Protocol Causes:**

- Transfer Syntax Error
- Abstract Syntax Error (Reject)
- Abstract Syntax Error (Ignore and Notify)
- Message not Compatible with Receiver State
- Unspecified

**8.5.1.2.1 Successful Operation for lur-g**

The RNC<sub>1</sub>/BSS<sub>1</sub> and RNC<sub>2</sub>/BSS<sub>2</sub> shall use the error indication procedure as specified in section 8.5.1.2.

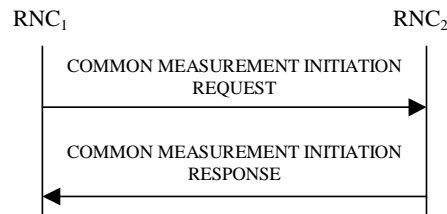
**8.5.1.3 Abnormal Conditions**

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**8.5.2 Common Measurement Initiation****8.5.2.1 General**

This procedure is used by an RNC to request the initiation of measurements of common resources to another RNC. The requesting RNC is referred to as RNC<sub>1</sub> and the RNC to which the request is sent is referred to as RNC<sub>2</sub>.

This procedure uses the signalling bearer connection for the relevant Distant RNC Context.

**8.5.2.2 Successful Operation**

**Figure 30A: Common Measurement Initiation procedure, Successful Operation**

The procedure is initiated with a COMMON MEASUREMENT INITIATION REQUEST message sent from the RNC<sub>1</sub> to the RNC<sub>2</sub>.

Upon receipt, the RNC<sub>2</sub> shall initiate the requested measurement according to the parameters given in the request.

Unless specified below, the meaning of the parameters are given in other specifications.

[TDD - If the [3.84 Mcps TDD - *Time Slot IE*] [1.28 Mcps - *Time Slot LCR IE*] is present in the COMMON MEASUREMENT INITIATION REQUEST message, the measurement request shall apply to the requested time slot individually.]

**Common measurement type**

If the *Common Measurement Type IE* is set to "SFN-SFN Observed Time Difference", then:

- The RNC<sub>2</sub> shall initiate the SFN-SFN Observed Time Difference measurements between the reference cell identified by the *Reference Cell Identifier IE* and the neighbouring cells identified by the *UTRAN Cell Identifier IE (UC-ID)* in the *Neighbouring Cell Measurement Information IE*.

- [3.84 Mcps TDD - The RNC<sub>2</sub> shall perform the measurement using the time slot specified in the *Time Slot* IE in the *Neighbouring TDD Cell Measurement Information* IE and using the midamble shift and burst type specified in the *Midamble Shift And Burst Type* IE in the *Neighbouring TDD Cell Measurement Information* IE, If *Time Slot* IE and *Midamble Shift And Burst Type* IE are not available in the *Neighbouring TDD Cell Measurement Information* IE, the RNC<sub>2</sub> may use any appropriate time slots, midamble shifts and burst types to make the measurement.]

If the *Common Measurement Type* IE is set to "load", the RNC<sub>2</sub> shall initiate measurements of uplink and downlink load on the measured object identified by the *Reference Cell Identifier* IE. If either uplink or downlink load satisfies the requested report characteristics, the RNC<sub>2</sub> shall report the result of both uplink and downlink measurements.

If the *Common Measurement Type* IE is set to "UTRAN GPS Timing of Cell Frames for UE Positioning", "transmitted carrier power", "received total wide band power", or "UL timeslot ISCP" the RNC<sub>2</sub> shall initiate measurements on the measured object identified by the *Reference Cell Identifier* IE.

If the *Common Measurement Type* IE is set to "RT load", the RNC<sub>2</sub> shall initiate measurements of uplink and downlink estimated share of RT (Real Time) traffic of the load of the measured object. If either uplink or downlink RT load satisfies the requested report characteristics, the RNC<sub>2</sub> shall report the result of both uplink and downlink measurements.

If the *Common Measurement Type* IE is set to "NRT load Information", the RNC<sub>2</sub> shall initiate measurements of uplink and downlink NRT (Non Real Time) load situation on the measured object. If either uplink or downlink NRT load satisfies the requested report characteristics, the RNC<sub>2</sub> shall report the result of both uplink and downlink measurements.

### Report characteristics

The *Report Characteristics* IE indicates how the reporting of the measurement shall be performed. See also Annex B.

If the *Report Characteristics* IE is set to "On Demand" and if the *SFN* IE is not provided, the RNC<sub>2</sub> shall report the result of the requested measurement immediately in the COMMON MEASUREMENT INITIATION RESPONSE message. If the *SFN* IE is provided, it indicates the frame for which the measurement value shall be provided. The provided measurement value shall be the one reported by the layer 3 filter, referred to as point C in the measurement model [26]. Furthermore, if the *SFN* IE is present and if the *Common Measurement Type* IE is set to "SFN-SFN Observed Time Difference", then the *SFN* IE relates to the Radio Frames of the Reference Cell identified by the *Reference Cell Identifier* IE.

If the *Report Characteristics* IE is set to "Periodic" and if the *SFN* IE is not provided, the RNC<sub>2</sub> shall immediately and periodically initiate a Common Measurement Reporting procedure for this measurement, with a frequency as specified by the *Report Periodicity* IE. If the *SFN* IE is provided, the RNC<sub>2</sub> shall initiate a Common Measurement Reporting procedure for this measurement at the SFN indicated in the *SFN* IE, and shall repeat this initiation periodically thereafter with a frequency as specified by the *Report Periodicity* IE. The provided measurement value shall be the one reported by the layer 3 filter, referred to as point C in the measurement model [26]. Furthermore, if the *SFN* IE is present and if the *Common Measurement Type* IE is set to "SFN-SFN Observed Time Difference", then the *SFN* IE relates to the Radio Frames of the Reference Cell identified by the *Reference Cell Identifier* IE.

If the *Report Characteristics* IE is set to "Event A", the RNC<sub>2</sub> shall initiate the Common Measurement Reporting procedure when the measured entity rises above the requested threshold, as specified by the *Measurement Threshold* IE, and then stays above the threshold for the requested hysteresis time, as specified by the *Measurement Hysteresis Time* IE. If the *Measurement Hysteresis Time* IE is not included, the RNC<sub>2</sub> shall use the value zero for the hysteresis time.

If the *Report Characteristics* IE is set to "Event B", the RNC<sub>2</sub> shall initiate the Common Measurement Reporting procedure when the measured entity falls below the requested threshold, as specified by the *Measurement Threshold* IE, and then stays below the threshold for the requested hysteresis time, as specified by the *Measurement Hysteresis Time* IE. If the *Measurement Hysteresis Time* IE is not included, the RNC<sub>2</sub> shall use the value zero for the hysteresis time.

If the *Report Characteristics* IE is set to "Event C", the RNC<sub>2</sub> shall initiate the Common Measurement Reporting procedure when the measured entity rises more than the requested threshold specified by the *Measurement Increase/Decrease Threshold* IE, and only when this rise occurs within the requested rising time specified by the *Measurement Change Time* IE. After reporting this type of event, the RNC<sub>2</sub> shall not initiate the next C event reporting for the same measurement during the subsequent time specified by the *Measurement Change Time* IE.

If the *Report Characteristics* IE is set to "Event D", the RNC<sub>2</sub> shall initiate the Common Measurement Reporting procedure when the measured entity falls more than the requested threshold specified by the *Measurement Increase/Decrease Threshold* IE, and only when this fall occurs within the requested falling time specified by the

*Measurement Change Time* IE. After reporting this type of event,, the RNC<sub>2</sub> shall not initiate the next D event reporting for the same measurement during the subsequent time specified by the *Measurement Change Time* IE.

If the *Report Characteristics* IE is set to "Event E", the RNC<sub>2</sub> shall initiate the Common Measurement Reporting procedure when the measured entity rises above the *Measurement Threshold 1* IE and stays above the threshold for the *Measurement Hysteresis Time* IE (Report A). When the conditions for Report A are met and if the *Report Periodicity* IE is provided, the RNC<sub>2</sub> shall initiate the Common Measurement Reporting procedure periodically with the requested report frequency specified by the *Report Periodicity* IE. If the conditions for Report A have been met and the measured entity falls below the *Measurement Threshold 2* IE and stays below the threshold for the *Measurement Hysteresis Time* IE, the RNC<sub>2</sub> shall initiate the Common Measurement Reporting procedure (Report B) and shall terminate any corresponding periodic reporting. If the *Measurement Threshold 2* IE is not present, the RNC<sub>2</sub> shall use the value of the *Measurement Threshold 1* IE instead. If the *Measurement Hysteresis Time* IE is not included, the RNC<sub>2</sub> shall use the value zero as hysteresis times for both Report A and Report B.

If the *Report Characteristics* IE is set to "Event F", the RNC<sub>2</sub> shall initiate the Common Measurement Reporting procedure when the measured entity falls below the *Measurement Threshold 1* IE and stays below the threshold for the *Measurement Hysteresis Time* IE (Report A). When the conditions for Report A are met and if the *Report Periodicity* IE is provided, the RNC<sub>2</sub> shall initiate the Measurement Reporting procedure periodically with the requested report frequency specified by the *Report Periodicity* IE. If the conditions for Report A have been met and the measured entity rises above the *Measurement Threshold 2* IE and stays above the threshold for the *Measurement Hysteresis Time* IE, the RNC<sub>2</sub> shall initiate the Common Measurement Reporting procedure (Report B) and shall terminate any corresponding periodic reporting. If the *Measurement Threshold 2* IE is not present, the RNC<sub>2</sub> shall use the value of the *Measurement Threshold 1* IE instead. If the *Measurement Hysteresis Time* IE is not included, the RNC<sub>2</sub> shall use the value zero as hysteresis times for both Report A and Report B.

If the *Report Characteristics* IE is set to "On Modification" and if the *SFN* IE is not provided, the RNC<sub>2</sub> shall report the result of the requested measurement immediately. If the *SFN* IE is provided, it indicates the frame for which the first measurement value shall be provided. The provided measurement value shall be the one reported by the layer 3 filter, referred to as point C in the measurement model [26]. Furthermore, if the *SFN* IE is present and if the *Common Measurement Type* IE is set to "SFN-SFN Observed Time Difference", then the *SFN* IE relates to the Radio Frames of the Reference Cell identified by the *Reference Cell Identifier* IE. Following the first measurement report, the RNC<sub>2</sub> shall initiate the Common Measurement Reporting procedure in accordance to the following conditions:

1. If the *Common Measurement Type* IE is set to "UTRAN GPS Timing of Cell Frames for UE Positioning":

- If the *T<sub>UTRAN-GPS</sub> Change Limit* IE is included in the *T<sub>UTRAN-GPS</sub> Measurement Threshold Information* IE, the RNC<sub>2</sub> shall calculate the change of T<sub>UTRAN-GPS</sub> value (F<sub>n</sub>) each time a new measurement result is received after point C in the measurement model [25]. The RNC<sub>2</sub> shall initiate the Common Measurement Reporting procedure and set n equal to zero when the absolute value of F<sub>n</sub> rises above the threshold indicated by the *T<sub>UTRAN-GPS</sub> Change Limit* IE. The change of T<sub>UTRAN-GPS</sub> value (F<sub>n</sub>) is calculated according to the following:

$$F_n = 0 \text{ for } n=0$$

$$F_n = (M_n - M_{n-1}) \bmod 3715891200000 - ((SFN_n - SFN_{n-1}) \bmod 4096) * 10 * 3.84 * 10^3 * 16 + F_{n-1} \quad \text{for } n > 0$$

F<sub>n</sub> is the change of the T<sub>UTRAN-GPS</sub> value expressed in unit [1/16 chip] when n measurement results have been received after the first Common Measurement Reporting at initiation or after the last event was triggered.

M<sub>n</sub> is the latest measurement result received after point C in the measurement model [25], measured at SFN<sub>n</sub>.

M<sub>n-1</sub> is the previous measurement result received after point C in the measurement model [25], measured at SFN<sub>n-1</sub>.

M<sub>1</sub> is the first measurement result received after point C in the measurement model [25], after first Common Measurement Reporting at initiation or after the last event was triggered.

M<sub>0</sub> is equal to the value reported in the first Common Measurement Reporting at initiation or in the Common Measurement Reporting when the event was triggered.

- If the *Predicted T<sub>UTRAN-GPS</sub> Deviation Limit* IE is included in the *T<sub>UTRAN-GPS</sub> Measurement Threshold Information* IE, the RNC<sub>2</sub> shall update the P<sub>n</sub> and F each time a new measurement result is received after point C in the measurement model [25]. The RNC<sub>2</sub> shall initiate the Common Measurement Reporting procedure and set n equal to zero when F<sub>n</sub> rises above the threshold indicated by the *Predicted T<sub>UTRAN-GPS</sub> Deviation Limit* IE. The P<sub>n</sub> and F<sub>n</sub> are calculated according to the following:

$$P_n = b \text{ for } n=0$$

$$P_n = ((a/16) * ((SFN_n - SFN_{n-1}) \bmod 4096) / 100 + ((SFN_n - SFN_{n-1}) \bmod 4096) * 10 * 3.84 * 10^3 * 16 + P_{n-1}) \bmod 3715891200000 \text{ for } n > 0$$

$$F_n = \min((M_n - P_n) \bmod 3715891200000, (P_n - M_n) \bmod 3715891200000) \text{ for } n > 0$$

$P_n$  is the predicted  $T_{\text{UTRAN-GPS}}$  value when  $n$  measurement results have been received after the first Common Measurement Reporting at initiation or after the last event was triggered.

$a$  is the last reported  $T_{\text{UTRAN-GPS}}$  Drift Rate value.

$b$  is the last reported  $T_{\text{UTRAN-GPS}}$  value.

$F_n$  is the deviation of the last measurement result from the predicted  $T_{\text{UTRAN-GPS}}$  value ( $P_n$ ) when  $n$  measurements have been received after the first Common Measurement Reporting at initiation or after the last event was triggered.

$M_n$  is the latest measurement result received after point C in the measurement model [25], measured at  $SFN_n$ .

$M_1$  is the first measurement result received after point C in the measurement model [25], after first Common Measurement Reporting at initiation or after the last event was triggered.

The  $T_{\text{UTRAN-GPS}}$  Drift Rate is determined by the  $RNS_2$  in an implementation-dependent way after point B (see model of physical layer measurements in [26]).

2. If the *Common Measurement Type* IE is set to "SFN-SFN Observed Time Difference":

- If the *SFN-SFN Change Limit* IE is included in the *SFN-SFN Measurement Threshold Information* IE, the  $RNC_2$  shall calculate the change of SFN-SFN value ( $F_n$ ) each time a new measurement result is received after point C in the measurement model [25]. The  $RNC_2$  shall initiate the Common Measurement Reporting procedure in order to report the particular SFN-SFN measurement which has triggered the event and set  $n$  equal to zero when the absolute value of  $F_n$  rises above the threshold indicated by the *SFN-SFN Change Limit* IE. The change of the SFN-SFN value is calculated according to the following:

$$F_n = 0 \text{ for } n=0$$

$$[\text{FDD} - F_n = (M_n - a) \bmod 614400 \text{ for } n > 0]$$

$$[\text{TDD} - F_n = (M_n - a) \bmod 40960 \text{ for } n > 0]$$

$F_n$  is the change of the SFN-SFN value expressed in unit [1/16 chip] when  $n$  measurement results have been received after the first Common Measurement Reporting at initiation or after the last event was triggered.

$a$  is the last reported SFN-SFN.

$M_n$  is the latest measurement result received after point C in the measurement model [25], measured at  $SFN_n$ .

$M_1$  is the first measurement result received after point C in the measurement model [25], after the first Common Measurement Reporting at initiation or after the last event was triggered.

- If the *Predicted SFN-SFN Deviation Limit* IE is included in the *SFN-SFN Measurement Threshold Information* IE, the  $RNC_2$  shall each time a new measurement result is received after point C in the measurement model [25], update the  $P_n$  and  $F_n$ . The  $RNC_2$  shall initiate the Common Measurement Reporting procedure in order to report the particular SFN-SFN measurement which has triggered the event and set  $n$  equal to zero when  $F_n$  rises above the threshold indicated by the *Predicted SFN-SFN Deviation Limit* IE. The  $P_n$  and  $F_n$  are calculated according to the following:

$$P_n = b \text{ for } n=0$$

$$[\text{FDD} - P_n = ((a/16) * ((SFN_n - SFN_{n-1}) \bmod 4096) / 100 + P_{n-1}) \bmod 614400 \text{ for } n > 0]$$

$$[\text{FDD} - F_n = \min((M_n - P_n) \bmod 614400, (P_n - M_n) \bmod 614400) \text{ for } n > 0]$$

$$[\text{TDD} - P_n = ((a/16) * (15 * (SFN_n - SFN_{n-1}) \bmod 4096 + (TS_n - TS_{n-1})) / 1500 + P_{n-1}) \bmod 40960 \text{ for } n > 0]$$

$$[\text{TDD} - F_n = \min((M_n - P_n) \bmod 40960, (P_n - M_n) \bmod 40960) \text{ for } n > 0]$$

$P_n$  is the predicted *SFN-SFN* value when  $n$  measurement results have been received after the first Common Measurement Reporting at initiation or after the last event was triggered.

$a$  is the last reported *SFN-SFN* Drift Rate value.

$b$  is the last reported *SFN-SFN* value.

$F_n$  is the deviation of the last measurement result from the predicted *SFN-SFN* value ( $P_n$ ) when  $n$  measurements have been received after first Common Measurement Reporting at initiation or after the last event was triggered.

$M_n$  is the latest measurement result received after point C in the measurement model [25], measured at the [TDD - the Time Slot  $TS_n$  of] the Frame  $SFN_n$ .

$M_1$  is the first measurement result received after point C in the measurement model [25], after first Common Measurement Reporting at initiation or after the last event was triggered.

The *SFN-SFN* Drift Rate is determined by the  $RNS_2$  in an implementation-dependent way after point B (see model of physical layer measurements in [26]).

If the *Report Characteristics* IE is not set to "On Demand", the  $RNC_2$  is required to perform reporting for a common measurement object, in accordance with the conditions provided in the COMMON MEASUREMENT INITIATION REQUEST message, as long as the object exists. If no common measurement object(s) for which a measurement is defined exists any more, the  $RNC_2$  shall terminate the measurement locally without reporting this to  $RNC_1$ .

If at the start of the measurement, the reporting criteria are fulfilled for any of Event A, Event B, Event E or Event F, the  $RNC_2$  shall initiate a Measurement Reporting procedure immediately, and then continue with the measurements as specified in the COMMON MEASUREMENT INITIATION REQUEST message.

### Common measurement accuracy

If the *Common Measurement Type* IE is set to "UTRAN GPS Timing of Cell Frames for UE Positioning", then the  $RNC_2$  shall use the *UTRAN GPS Timing Measurement Minimum Accuracy Class* IE included in the *Report Characteristics* IE according to the following:

- If the *UTRAN GPS Timing Measurement Minimum Accuracy Class* IE indicates "Class A", then the concerned  $RNC_2$  shall perform the measurement with the highest supported accuracy within the accuracy classes A, B or C.
- If the *UTRAN GPS Timing Measurement Minimum Accuracy Class* IE indicates the "Class B", then the concerned  $RNC_2$  shall perform the measurements with the highest supported accuracy within the accuracy classes B and C.
- If the *UTRAN GPS Timing Measurement Minimum Accuracy Class* IE indicates "Class C", then the concerned  $RNC_2$  shall perform the measurements with the highest supported accuracy according to class C.
- If the *Common Measurement Type* IE is set to "SFN-SFN Observed Time Difference", then the concerned  $RNC_2$  shall initiate the SFN-SFN observed Time Difference measurements between the reference cell identified by *UC-ID* IE and the neighbouring cells identified by their UC-ID. The *Report Characteristics* IE applies to each of these measurements.

### Higher layer filtering

The *Measurement Filter Coefficient* IE indicates how filtering of the measurement values shall be performed before measurement event evaluation and reporting.

The averaging shall be performed according to the following formula.

$$F_n = (1 - a) \cdot F_{n-1} + a \cdot M_n$$

The variables in the formula are defined as follows

$F_n$  is the updated filtered measurement result

$F_{n-1}$  is the old filtered measurement result

$M_n$  is the latest received measurement result from physical layer measurements, the unit used for  $M_n$  is the same unit as the reported unit in the COMMON MEASUREMENT INITIATION RESPONSE, COMMON MEASUREMENT REPORT messages or the unit used in the event evaluation (i.e. same unit as for  $F_n$ ).

$a = 1/2^{(k/2)}$  -, where  $k$  is the parameter received in the *Measurement Filter Coefficient* IE. If the *Measurement Filter Coefficient* IE is not present,  $a$  shall be set to 1 (no filtering).

In order to initialise the averaging filter,  $F_0$  is set to  $M_1$  when the first measurement result from the physical layer measurement is received.

#### Measurement Recovery Behavior:

If the *Measurement Recovery Behavior* IE is included in the COMMON MEASUREMENT INITIATION REQUEST message, the RNC<sub>2</sub> shall, if Measurement Recovery Behavior is supported, include the *Measurement Recovery Support Indicator* IE in the COMMON MEASUREMENT INITIATION RESPONSE message and perform the Measurement Recovery Behavior as described in subclause 8.5.3.2.

#### Response message

If the RNC<sub>2</sub> was able to initiate the measurement requested by RNC, it shall respond with the COMMON MEASUREMENT INITIATION RESPONSE message. The message shall include the same Measurement ID that was used in the COMMON MEASUREMENT INITIATION REQUEST message.

In the case in which the *Report Characteristics* IE is set to "On Demand" or "On Modification":

- The COMMON MEASUREMENT INITIATION RESPONSE message shall include the *Common Measurement Object Type* IE containing the measurement result. It shall also include the *Common Measurement Achieved Accuracy* IE if the *Common Measurement Type* IE is set to "UTRAN GPS Timing of Cell Frames for UE positioning".
- If the *Common Measurement Type* IE is not set to "SFN-SFN Observed Time Difference" and if the *SFN Reporting Indicator* IE is set to "FN Reporting Required", then the RNC<sub>2</sub> shall include the *SFN* IE in the COMMON MEASUREMENT INITIATION RESPONSE message. The reported SFN shall be the SFN at the time when the measurement value was reported by the layer 3 filter, referred to as point C in the measurement model [26]. If the *Common Measurement Type* IE is set to "SFN-SFN Observed Time Difference", then the *SFN Reporting Indicator* IE is ignored.
- If the *Common Measurement Type* IE is set to "SFN-SFN Observed Time Difference", then the RNC<sub>2</sub> shall report all the available measurements in the *Successful Neighbouring cell SFN-SFN Observed Time Difference Measurement Information* IE, and the RNC<sub>2</sub> shall report the neighbouring cells with no measurement result available in the *Unsuccessful Neighbouring cell SFN-SFN Observed Time Difference Measurement Information* IE. For all available measurement results, the RNC<sub>2</sub> shall include in the *Successful Neighbouring Cell SFN-SFN Observed Time Difference Measurement Information* IE the *SFN-SFN Quality* IE and the *SFN-SFN Drift Rate Quality* IE, if available.

If the *Common Measurement Type* IE is set to "UTRAN GPS Timing of Cell Frames for UE Positioning" and the *Report Characteristics* IE is set to "On Demand" or "On Modification", the RNC<sub>2</sub> shall include in the *T<sub>UTRAN-GPS</sub> Measurement Value Information* IE the *T<sub>UTRAN-GPS</sub> Quality* IE and the *T<sub>UTRAN-GPS</sub> Drift Rate Quality* IE, if available.

#### 8.5.2.2.1 Successful Operation for Iur-g

The procedure is initiated with a COMMON MEASUREMENT INITIATION REQUEST message sent from the RNC<sub>1</sub> to the BSS<sub>2</sub> or from the BSS<sub>1</sub> to the RNC<sub>2</sub>/BSS<sub>2</sub>.

Upon receipt, the RNC<sub>2</sub> /BSS<sub>2</sub> shall initiate the requested measurement according to the parameters given in the request.

#### Common measurement type on Iur-g

If the *Common Measurement Type* IE is set to "load", the RNC<sub>2</sub>/BSS<sub>2</sub> shall initiate measurements and report results as described in section 8.5.2.2.

If the *Common Measurement Type* IE is set to "RT load", the RNC<sub>2</sub>/BSS<sub>2</sub> shall initiate measurements and report results as described in section 8.5.2.2.

If the *Common Measurement Type* IE is set to "NRT load Information", the RNC<sub>2</sub>/BSS<sub>2</sub> shall initiate measurements and report results as described in section 8.5.2.2.

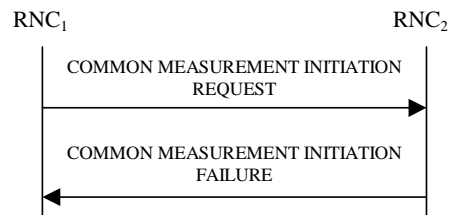
### Report characteristics on Iur-g

The *Report Characteristics* IE indicates how the reporting of the measurement shall be performed. This IE is used as described in section 8.5.2.2.

### Response message for Iur-g

If the RNC<sub>2</sub>/BSS<sub>2</sub> was able to initiate the measurement requested by RNC<sub>1</sub>/BSS<sub>1</sub> it shall respond with the COMMON MEASUREMENT INITIATION RESPONSE message sent. The message shall include the same Measurement ID that was used in the measurement request. Only in the case when the *Report Characteristics* IE is set to "On Demand", the COMMON MEASUREMENT INITIATION RESPONSE message shall contain the measurement result.

### 8.5.2.3 Unsuccessful Operation



**Figure 30B: Common Measurement Initiation procedure, Unsuccessful Operation**

If the requested measurement cannot be initiated, the RNC<sub>2</sub> shall send a COMMON MEASUREMENT INITIATION FAILURE message. The message shall include the same *Measurement ID* IE that was used in the COMMON MEASUREMENT INITIATION REQUEST message and shall include the *Cause* IE set to an appropriate value.

Typical cause values are as follows:

#### Radio Network Layer Cause

- Measurement not supported for the object.
- Measurement Temporarily not Available

### 8.5.2.4 Abnormal Conditions

If the COMMON MEASUREMENT INITIATION REQUEST message contains the *SFN-SFN Measurement Threshold Information* IE (in the *Measurement Threshold* IE contained in the *Report Characteristics* IE) and it does not contain at least one IE, the RNC<sub>2</sub> shall reject the procedure using the COMMON MEASUREMENT INITIATION FAILURE message.

If the COMMON MEASUREMENT INITIATION REQUEST message contains the *T<sub>UTRAN-GPS</sub> Measurement Threshold Information* IE (in the *Measurement Threshold* IE contained in the *Report Characteristics* IE) and it does not contain at least one IE, the RNC<sub>2</sub> shall reject the procedure using the COMMON MEASUREMENT INITIATION FAILURE message.

If the *Common Measurement Type* IE is set to "UTRAN GPS Timing of Cell Frames for UE positioning", but the *T<sub>UTRAN-GPS</sub> Measurement Minimum Accuracy Class* IE in the *Common Measurement Accuracy* IE is not included in the COMMON MEASUREMENT INITIATION REQUEST message, the RNC<sub>2</sub> shall reject the Common Measurement Initiation procedure using the COMMON MEASUREMENT INITIATION FAILURE message.

If the *Common Measurement Type* IE is not set to "UTRAN GPS Timing of Cell Frames for UE Positioning" and the *Common Measurement Accuracy* IE is included in the COMMON MEASUREMENT INITIATION REQUEST message, the RNC<sub>2</sub> shall reject the Common Measurement Initiation procedure using the COMMON MEASUREMENT INITIATION FAILURE message.

If the Common Measurement Type received in the *Common Measurement Type* IE is not "load", "RT load" or "NRT load Information", and if the Common Measurement Type received in the *Common Measurement Type* IE is not defined in ref. [11] or [15] to be measured on the Common Measurement Object Type indicated in the COMMON



MEASUREMENT INITIATION REQUEST message the RNC<sub>2</sub> shall reject the Common Measurement Initiation procedure using the COMMON MEASUREMENT INITIATION FAILURE message.

If the *Common Measurement Type* IE is set to "SFN-SFN Observed Time Difference", but the *Neighbouring Cell Measurement Information* IE is not received in the COMMON MEASUREMENT INITIATION REQUEST message, the RNC<sub>2</sub> shall reject the Common Measurement Initiation procedure using the COMMON MEASUREMENT INITIATION FAILURE message.

The allowed combinations of the Common Measurement Type and Report Characteristics Type are shown in the table below marked with "X". For not allowed combinations, the RNC<sub>2</sub> shall reject the Common Measurement Initiation procedure using the COMMON MEASUREMENT INITIATION FAILURE message.

**Table 5: Allowed Common Measurement Type and Report Characteristics Type Combinations**

Common measurement type	Report characteristics type								
	On Demand	Periodic	Event A	Event B	Event C	Event D	Event E	Event F	On Modification
Received total wide band power	X	X	X	X	X	X	X	X	
Transmitted Carrier Power	X	X	X	X	X	X	X	X	
UL Timeslot ISCP	X	X	X	X	X	X	X	X	
Load	X	X	X	X	X	X	X	X	
UTRAN GPS Timing of Cell Frames for UE Positioning	X	X							X
SFN-SFN Observed Time Difference	X	X							X
RT load	X	X	X	X	X	X	X	X	
NRT load Information	X	X	X	X	X	X	X	X	
UpPTS interference	X	X	X	X	X	X	X	X	

[TDD - If the Common Measurement Type requires the Time Slot Information but the [3.84Mcps TDD - *Time Slot* IE] [1.28Mcps TDD - *Time Slot LCR* IE] is not provided in the COMMON MEASUREMENT INITIATION REQUEST message the RNS<sub>2</sub> shall reject the Common Measurement Initiation procedure using the COMMON MEASUREMENT INITIATION FAILURE message.]

If the *SFN* IE is included in the COMMON MEASUREMENT INITIATION REQUEST message and the *Report Characteristics* IE is other than "Periodic", "On Demand" or "On Modification", the RNS<sub>2</sub> shall reject the Common Measurement Initiation procedure using the COMMON MEASUREMENT INITIATION FAILURE message.

#### 8.5.2.4.1 Abnormal Conditions for Iur-g

The measurements which can be requested on the Iur and Iur-g interfaces are shown in the table below marked with "X".

**Table 6: Allowed Common measurement type on Iur and Iur-g interfaces**

Common Measurement Type	Interface	
	Iur	Iur-g
Received total wide band power	X	
Transmitted Carrier Power	X	
UL Timeslot ISCP	X	
Load	X	X
UTRAN GPS Timing of Cell Frames for LCS	X	
SFN-SFN Observed Time Difference	X	
RT load	X	X
NRT load Information	X	X

If the RNC<sub>2</sub> receives from the BSS<sub>1</sub> a COMMON MEASUREMENT INITIATION REQUEST message in which a measurement, which is not applicable on the Iur-g interface, is requested, the RNC<sub>2</sub> shall reject the Common Measurement Initiation procedure.

If the BSS<sub>2</sub> receives from the BSS<sub>1</sub> / RNC<sub>1</sub> a COMMON MEASUREMENT INITIATION REQUEST message in which a measurement, which is not applicable on the Iur-g interface, is requested, the BSS<sub>2</sub> shall reject the Common Measurement Initiation procedure.

If the RNC<sub>2</sub> receives from the BSS<sub>1</sub> a COMMON MEASUREMENT INITIATION REQUEST message in which the *SFN reporting indicator* IE is set to "FN Reporting Required", the RNC<sub>2</sub> shall ignore that IE.

If the BSS<sub>2</sub> receives from the BSS<sub>1</sub> / RNC<sub>1</sub> a COMMON MEASUREMENT INITIATION REQUEST message in which the *SFN reporting indicator* IE is set to "FN Reporting Required", the BSS<sub>2</sub> shall ignore that IE.

The allowed combinations of the Common measurement type and Report characteristics type are shown in the table in section 8.5.2.4 marked with "X". For not allowed combinations, the RNC<sub>2</sub>/BSS<sub>2</sub> shall reject the Common Measurement Initiation procedure.

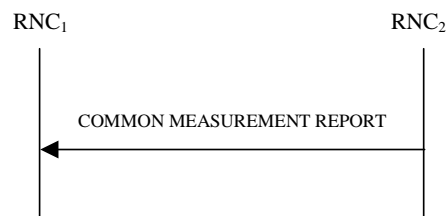
## 8.5.3 Common Measurement Reporting

### 8.5.3.1 General

This procedure is used by an RNC to report the result of measurements requested by another RNC using the Common Measurement Initiation.

This procedure uses the signalling bearer connection for the relevant Distant RNC Context.

### 8.5.3.2 Successful Operation



**Figure 30C: Common Measurement Reporting procedure, Successful Operation**

If the requested measurement reporting criteria are met, the RNC<sub>2</sub> shall initiate the Common Measurement Reporting procedure. Unless specified below, the meaning of the parameters are given in other specifications.

The *Measurement ID* IE shall be set to the Measurement ID provided by RNC<sub>1</sub> when initiating the measurement with the Common Measurement Initiation procedure.

If the achieved measurement accuracy does not fulfil the given accuracy requirement (see ref. [23] and [24]) or the measurement is temporarily not available in case Measurement Recovery Behavior is supported, the *Common*

*Measurement Value Information* IE shall indicate Measurement not Available. If the RNC<sub>2</sub> was configured to perform the Measurement Recovery Behavior, the RNC<sub>2</sub> shall indicate Measurement Available to the RNC<sub>1</sub> when the achieved measurement accuracy again fulfils the given accuracy requirement (see ref. [23] and [24]) and include the *Measurement Recovery Report Indicator* IE in the COMMON MEASUREMENT REPORT message if the requested measurement reporting criteria are not met.

For measurements included in the *Successful Neighbouring Cell SFN-SFN Observed Time Difference Measurement Information* IE, the RNC<sub>2</sub> shall include the *SFN-SFN Quality* IE and the *SFN-SFN Drift Rate Quality* IE if available.

If the Common Measurement Type provided by RNC<sub>1</sub> when initiating the measurement with the Common Measurement Initiation procedure was "UTRAN GPS Timing of Cell Frames for UE Positioning", then the RNC<sub>2</sub> shall include in the *T<sub>UTRAN-GPS</sub> Measurement Value Information* IE the *T<sub>UTRAN-GPS</sub> Quality* IE and the *T<sub>UTRAN-GPS</sub> Drift Rate Quality* IE, if available.

#### 8.5.3.2.1 Successful Operation for lur-g

If the requested measurement reporting criteria are met, the RNC<sub>2</sub>/BSS<sub>2</sub> shall initiate a Measurement Reporting procedure. Unless specified below, the meaning of the parameters are given in other specifications.

The *Common Measurement ID* IE shall be set to the Common Measurement ID provided by RNC<sub>1</sub>/BSS<sub>1</sub> when initiating the measurement with the Common Measurement Initiation procedure.

If the Common measurement type provided by RNC<sub>1</sub> when initiating the measurement with the Common Measurement Initiation procedure was "SFN-SFN Observed Time Difference", then RNC<sub>2</sub> shall include in the COMMON MEASUREMENT REPORT all the available measurements in the *Successful Neighbouring cell SFN-SFN Observed Time Difference Measurement Information* IE and shall include the neighbouring cells with no measurement result available in the *Unsuccessful Neighbouring cell SFN-SFN Observed Time Difference Measurement Information* IE.

If the Common measurement type provided by RNC<sub>1</sub> when initiating the measurement with the Common Measurement Initiation procedure was not set to "SFN-SFN Observed Time Difference" and the SFN Reporting Indicator when initiating the measurement was set to "FN Reporting Required", the RNC<sub>2</sub> shall include the *SFN* IE in the COMMON MEASUREMENT REPORT message. The reported SFN shall be the SFN at the time when the measurement value was reported by the layer 3 filter, referred to as point C in the measurement model [26]. If the *Common Measurement Type* IE is set to "SFN-SFN Observed Time Difference", then the *SFN Reporting Indicator* IE is ignored.

#### 8.5.3.3 Abnormal Conditions

-

### 8.5.4 Common Measurement Termination

#### 8.5.4.1 General

This procedure is used by an RNC to terminate a measurement previously requested by the Common Measurement Initiation procedure.

This procedure uses the signalling bearer connection for the relevant Distant RNC Context.

#### 8.5.4.2 Successful Operation



**Figure 30D: Common Measurement Termination procedure, Successful Operation**

This procedure is initiated with a COMMON MEASUREMENT TERMINATION REQUEST message.

Upon receipt, RNC<sub>2</sub> shall terminate reporting of common measurements corresponding to the received *Measurement ID* IE.

#### 8.5.4.2.1 Successful Operation for lur-g

The RNC<sub>1</sub>/BSS<sub>1</sub> and RNC<sub>2</sub>/BSS<sub>2</sub> shall use the Common Measurement Termination procedure as specified in section 8.5.4.2.

#### 8.5.4.3 Abnormal Conditions

-

### 8.5.5 Common Measurement Failure

#### 8.5.5.1 General

This procedure is used by an RNC to notify another RNC that a measurement previously requested by the Common Measurement Initiation procedure can no longer be reported.

This procedure uses the signalling bearer connection for the relevant Distant RNC Context.

#### 8.5.5.2 Successful Operation



**Figure 30E: Common Measurement Failure procedure, Successful Operation**

This procedure is initiated with a COMMON MEASUREMENT FAILURE INDICATION message, sent from RNC<sub>2</sub> to RNC<sub>1</sub> to inform the RNC<sub>1</sub> that a previously requested measurement can no longer be reported. RNC<sub>2</sub> has locally terminated the indicated measurement. The RNC<sub>2</sub> shall include in the COMMON MEASUREMENT FAILURE INDICATION message the reason for the failure in the *Cause* IE.

#### 8.5.5.2.1 Successful Operation for lur-g

The RNC<sub>1</sub>/BSS<sub>1</sub> and RNC<sub>2</sub>/BSS<sub>2</sub> shall use the Common Measurement Failure procedure as specified in section 8.5.5.2.

#### 8.5.5.3 Abnormal Conditions

-

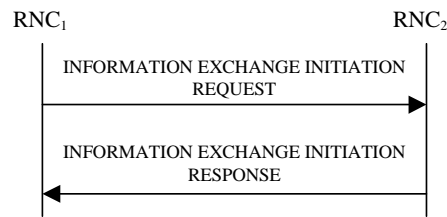
### 8.5.6 Information Exchange Initiation

#### 8.5.6.1 General

This procedure is used by an RNC to request the initiation of an information exchange with another RNC.

This procedure uses the signalling bearer connection for the relevant Distant RNC Context.

## 8.5.6.2 Successful Operation



**Figure 30F: Information Exchange Initiation procedure, Successful Operation**

The procedure is initiated with an INFORMATION EXCHANGE INITIATION REQUEST message sent from RNC<sub>1</sub> to RNC<sub>2</sub>.

Upon receipt, the RNC<sub>2</sub> shall provide the requested information according to the parameters given in the request. Unless specified below, the meaning of the parameters are given in other specifications.

### Information Report Characteristics:

The *Information Report Characteristics* IE indicates how the reporting of the information shall be performed.

If the *Information Report Characteristics* IE is set to "On Demand", the RNC<sub>2</sub> shall report the requested information immediately.

If the *Information Report Characteristics* IE is set to "Periodic", the RNC<sub>2</sub> shall report the requested information immediately and then shall periodically initiate the Information Reporting procedure for all the requested information, with the report frequency indicated by the *Information Report Periodicity* IE.

If the *Information Report Characteristics* IE is set to "On Modification", the RNC<sub>2</sub> shall report the requested information immediately if available. If the requested information is not available at the moment of receiving the INFORMATION EXCHANGE INITIATION REQUEST message, but expected to become available after some acquisition time, the RNC<sub>2</sub> shall initiate the Information Reporting procedure when the requested information becomes available. The RNC<sub>2</sub> shall then initiate the Information Reporting procedure in accordance to the following conditions:

- If the *Information Type Item* IE is set to "IPDL Parameters", the RNC<sub>2</sub> shall initiate the Information Reporting procedure when any change in the parameters occurs.
- If the *Information Type Item* IE is set to "DGPS Corrections", the RNC<sub>2</sub> shall initiate the Information Reporting procedure for this specific Information Type when either the PRC has drifted from the previously reported value more than the threshold indicated in the *PRC Deviation* IE in the *Information Threshold* IE or a change has occurred in the IODE.
- If the *Information Type Item* IE is set to "GPS Information" and the *GPS Information Item* IE includes "GPS Navigation Model & Recovery Assistance", the RNC<sub>2</sub> shall initiate the Information Reporting procedure for this specific GPS Information Item when a change has occurred regarding either the IODC or the list of visible satellites, identified by the *Sat ID* IEs.
- If the *Information Type Item* IE is set to "GPS Information" and the *GPS Information Item* IE includes "GPS Ionospheric Model", the RNC<sub>2</sub> shall initiate the Information Reporting procedure for this specific GPS Information Item when any change has occurred.
- If the *Information Type Item* IE is set to "GPS Information" and the *GPS Information Item* IE includes "GPS UTC Model", the RNC<sub>2</sub> shall initiate the Information Reporting procedure for this specific GPS Information Item when a change has occurred in the  $t_{ot}$  or  $WN_t$  parameter.
- If the *Information Type Item* IE is set to "GPS Information" and the *GPS Information Item* IE includes "GPS Almanac", the RNC<sub>2</sub> shall initiate the Information Reporting procedure for this specific GPS Information Item when a change in the  $t_{oa}$  or  $WN_a$  parameter has occurred.

- If the *Information Type Item* IE is set to "GPS Information" and the *GPS Information Item* IE includes "GPS Real-Time Integrity", the RNC<sub>2</sub> shall initiate the Information Reporting procedure for this specific GPS Information Item when any change has occurred.
- If the *Information Type* IE is set to "Cell Capacity Class", the RNC<sub>2</sub> shall initiate the Information Reporting procedure for uplink and downlink cell capacity class when any change has occurred. If either uplink or downlink cell capacity class satisfies the requested report characteristics, the RNC<sub>2</sub> shall report the result of both uplink and downlink cell capacity information.
- If any of the above *Information Type* IEs becomes temporarily unavailable, the RNC<sub>2</sub> shall initiate the Information Reporting procedure for this specific Information Item by indicating "Information Not Available" in the *Requested Data Value Information* IE. If the Information becomes available again, the RNC<sub>2</sub> shall initiate the Information Reporting procedure for this specific Information.
- If the *Information Type* IE is set to "NACC related data", the RNC<sub>2</sub> shall initiate the Information Reporting procedure for NACC related data if any change has occurred.

#### Response message:

If the RNC<sub>2</sub> is able to determine the information requested by the RNC<sub>1</sub>, it shall respond with the INFORMATION EXCHANGE INITIATION RESPONSE message. The message shall include the *Information Exchange ID* IE set to the same value that was included in the INFORMATION EXCHANGE INITIATION REQUEST message. When the *Report Characteristics* IE is set to or "On Modification" or "Periodic", the INFORMATION EXCHANGE INITIATION RESPONSE message shall contain the *Requested Data Value* IE if the data are available. When the *Report Characteristics* IE is set to "On Demand", the INFORMATION EXCHANGE INITIATION RESPONSE message shall contain the *Requested Data Value* IE.

#### 8.5.6.2.1 Successful Operation for Iur-g

The procedure is initiated with an INFORMATION EXCHANGE INITIATION REQUEST message sent from BSS<sub>1</sub> to BSS<sub>2</sub>/RNC<sub>2</sub> or by RNC<sub>1</sub> to BSS<sub>2</sub>.

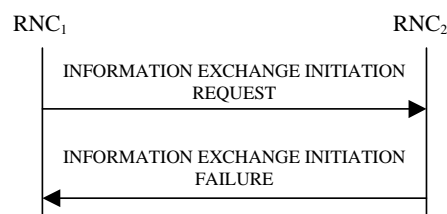
Upon receipt, the BSS<sub>2</sub>/RNC<sub>2</sub> shall provide the requested information according to the parameters given in the request. Unless specified below, the meaning of the parameters are given in other specifications.

#### Information Report Characteristics on Iur-g:

If the *Information Type Item* IE is set to "Cell Capacity Class", the RNC<sub>2</sub>/BSS<sub>2</sub> shall initiate measurements and report results as described in section 8.5.6.2.

The *Information Report Characteristics* IE indicates how the reporting of the information shall be performed. This IE is used as described in section 8.5.6.2.

#### 8.5.6.3 Unsuccessful Operation



**Figure 30G: Information Exchange Initiation procedure, Unsuccessful Operation**

If the requested Information Type received in the *Information Type* IE indicates a type of information that RNC<sub>2</sub> cannot provide, the RNC<sub>2</sub> shall reject the Information Exchange Initiation procedure.

If the requested information provision cannot be accessed, the RNC<sub>2</sub> shall reject the procedure and shall send the INFORMATION EXCHANGE INITIATION FAILURE message.

The message shall include the *Information Exchange ID* IE set to the same value that was used in the INFORMATION EXCHANGE INITIATION REQUEST message and the *Cause* IE set to an appropriate value.

Typical cause values are as follows:

**Radio Network Layer Cause:**

- Information temporarily not available.
- Information Provision not supported for the object.

#### 8.5.6.4 Abnormal Conditions

If the *Information Report Characteristics* IE is set to "On Modification", and the *Information Type Item* IE is set to "DGPS Corrections", but the *Information Threshold* IE is not received in the INFORMATION EXCHANGE INITIATION REQUEST message, the RNC<sub>2</sub> shall reject the Information Exchange Initiation procedure and shall send the INFORMATION EXCHANGE INITIATION FAILURE message.

If the *Information Exchange Object Type* IE is set to "Cell" and the *Information Type Item* IE set to "NACC related data" the RNC<sub>2</sub> shall reject the Information Exchange Initiation procedure and shall send the INFORMATION EXCHANGE INITIATION FAILURE message.

The allowed combinations of the Information type and Information Report Characteristics type are shown in the table below marked with "X". For not allowed combinations, the RNC<sub>2</sub> shall reject the Information Exchange Initiation procedure using the INFORMATION EXCHANGE INITIATION FAILURE message.

**Table 6a: Allowed Information Type and Information Report Characteristics type combinations**

Type	Information Report Characteristics Type		
	On Demand	Periodic	On Modification
UTRAN Access Point Position with Altitude Information	X		
UTRAN Access Point Position	X		
IPDL Parameters	X	X	X
GPS Information	X	X	X
DGPS Corrections	X	X	X
GPS RX Pos	X		
SFN-SFN Measurement Reference Point Position	X		
Cell Capacity Class	X		X
NACC related data	X		X

#### 8.5.6.4.1 Abnormal Conditions for Iur-g

The information types that can be requested on the Iur and Iur-g interfaces are shown in the table below marked with "X". For information types that are not applicable on the Iur-g interface, the BSS shall reject the Information Exchange Initiation procedure.

**Table 7: Allowed Information types on Iur and Iur-g interfaces**

Information Type	Interface	
	lur	lur-g
UTRAN Access Point Position with Altitude Information	X	
UTRAN Access Point Position	X	
IPDL Parameters	X	
DGPS Corrections	X	
GPS Information	X	
GPS RX Pos	X	
SFN-SFN Measurement Reference Point Position	X	
Cell Capacity Class	X	X
NACC related data	X	

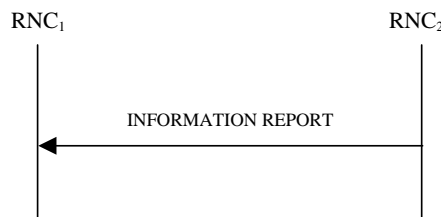
## 8.5.7 Information Reporting

### 8.5.7.1 General

This procedure is used by a RNC to report the result of information requested by another RNC using the Information Exchange Initiation.

This procedure uses the signalling bearer connection for the relevant Distant RNC Context.

### 8.5.7.2 Successful Operation



**Figure 30H: Information Reporting procedure, Successful Operation**

If the requested information reporting criteria are met, the RNC<sub>2</sub> shall initiate an Information Reporting procedure. Unless specified below, the meaning of the parameters are given in other specifications.

The *Information Exchange ID* IE shall be set to the Information Exchange ID provided by the RNC<sub>1</sub> when initiating the information exchange with the Information Exchange Initiation procedure.

The *Requested Data Value* IE shall include at least one IE containing the data to be reported.

#### 8.5.7.2.1 Successful Operation for lur-g

The RNC<sub>1</sub>/BSS<sub>1</sub> and RNC<sub>2</sub>/BSS<sub>2</sub> shall use the Information Reporting procedure as specified in section 8.5.7.2.

### 8.5.7.3 Abnormal Conditions

-

## 8.5.8 Information Exchange Termination

### 8.5.8.1 General

This procedure is used by a RNC to terminate the information exchange requested using the Information Exchange Initiation.



This procedure uses the signalling bearer connection for the relevant Distant RNC Context.

### 8.5.8.2 Successful Operation



**Figure 30I: Information Exchange Termination procedure, Successful Operation**

This procedure is initiated with a INFORMATION EXCHANGE TERMINATION REQUEST message.

Upon receipt, the RNC<sub>2</sub> shall terminate the information exchange corresponding to the *Information Exchange ID IE* provided by the RNC<sub>1</sub> when initiating the information exchange with the Information Exchange Initiation procedure.

#### 8.5.8.2.1 Successful Operation for lur-g

The RNC<sub>1</sub>/BSS<sub>1</sub> and RNC<sub>2</sub>/BSS<sub>2</sub> shall use the Information Exchange Termination procedure as specified in section 8.5.8.2.

### 8.5.8.3 Abnormal Conditions

-

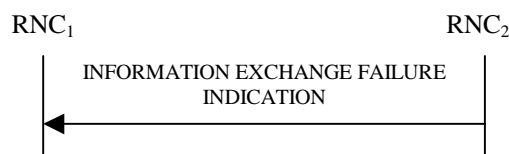
## 8.5.9 Information Exchange Failure

### 8.5.9.1 General

This procedure is used by a RNC to notify another that the information exchange it previously requested using the Information Exchange Initiation can no longer be reported.

This procedure uses the signalling bearer connection for the relevant Distant RNC Context.

### 8.5.9.2 Successful Operation



**Figure 30J: Information Exchange Failure procedure, Successful Operation**

This procedure is initiated with a INFORMATION EXCHANGE FAILURE INDICATION message, sent from the RNC<sub>2</sub> to the RNC<sub>1</sub>, to inform the RNC<sub>1</sub> that information previously requested by the Information Exchange Initiation procedure can no longer be reported. The RNC<sub>2</sub> shall include in the INFORMATION EXCHANGE FAILURE INDICATION message the *Information Exchange ID IE* set to the same value provided by the RNC<sub>1</sub> when initiating the information exchange with the Information Exchange Initiation procedure, and the RNC<sub>2</sub> shall include the *Cause IE* set to an appropriate value.

Typical cause values are as follows:

#### **Radio Network Layer Cause:**

Information temporarily not available.

### 8.5.9.2.1 Successful Operation for Iur-g

The RNC<sub>1</sub>/BSS<sub>1</sub> and RNC<sub>2</sub>/BSS<sub>2</sub> shall use the Information Exchange Failure procedure as specified in section 8.5.9.2.

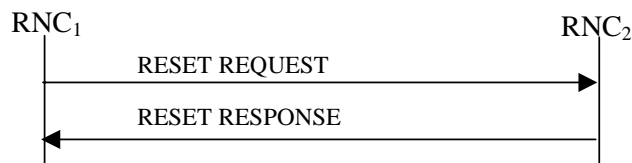
## 8.5.10 Reset

### 8.5.10.1 General

The purpose of the reset procedure is to align the resources in RNC<sub>1</sub> and RNC<sub>2</sub> in the event of an abnormal failure.

The procedure uses connectionless signalling.

### 8.5.10.2 Successful Operation



**Figure 30K: Reset procedure, Successful Operation**

The procedure is initiated with a RESET REQUEST message sent from the RNC<sub>1</sub> to the RNC<sub>2</sub>.

If the *Reset Indicator* IE is set to "Context", then:

- For all indicated UE Contexts identified by the *S-RNTI* IE, the RNC<sub>2</sub> in the role of DRNC, shall remove all the indicated UE Contexts and all the radio resources allocated for these UE Contexts. In addition, the RNC<sub>2</sub> shall take actions according to Annex D.2.
- For all indicated UE Contexts identified by the *D-RNTI* IE, the RNC<sub>2</sub> in the role of SRNC, shall remove the information related to the RNC<sub>1</sub> for all indicated UE Contexts and the radio resources allocated for these UE Contexts.

If the *Reset Indicator* IE is set to "Context Group", then:

- For all indicated UE Context Groups identified by the *S-RNTI Group* IE, the RNC<sub>2</sub> in the role of DRNC, shall remove all the indicated UE Contexts and all the radio resources allocated for these UE Contexts. In addition, the RNC<sub>2</sub> shall take actions according to Annex D.2.

If the *Reset Indicator* IE is set to "All Contexts", then the RNC<sub>2</sub> shall:

- In the role of DRNC, remove all the UE Contexts for which the RNC<sub>1</sub> is the SRNC and all the radio resources allocated for these UE Contexts. In addition, the RNC<sub>2</sub> shall take actions according to Annex D.2.
- In the role of SRNC, remove the information related to the RNC<sub>1</sub> for all the UE Contexts and all the radio resources allocated for these UE Contexts.

For all the removed UE Contexts and for all the UE Contexts for which the RNC<sub>2</sub> has removed information related to the RNC<sub>1</sub>, the RNC<sub>2</sub> shall also initiate release of the dedicated or common user plane resources that were involved in these UE Contexts. After clearing all related resources, the RNC<sub>2</sub> shall return the RESET RESPONSE message to the RNC<sub>1</sub>.

### 8.5.10.3 Abnormal Conditions

If the RESET message is received, any other ongoing procedure (except another Reset procedure) on same Iur interface related to a context indicated explicitly or implicitly in the message shall be aborted.

## 9 Elements for RNSAP Communication

### 9.1 Message Functional Definition and Content

#### 9.1.1 General

This subclause defines the structure of the messages required for the RNSAP protocol in tabular format. The corresponding ASN.1 definition is presented in subclause 9.3. In case there is contradiction between the tabular format in subclause 9.1 and the ASN.1 definition, the ASN.1 shall take precedence, except for the definition of conditions for the presence of conditional IEs, in which the tabular format shall take precedence.

NOTE: The messages have been defined in accordance to the guidelines specified in [28].

#### 9.1.2 Message Contents

##### 9.1.2.1 Presence

An information element can be of the following types:

<b>M</b>	IEs marked as Mandatory (M) shall always be included in the message.
<b>O</b>	IEs marked as Optional (O) may or may not be included in the message.
<b>C</b>	IEs marked as Conditional (C) shall be included in a message only if the condition is satisfied. Otherwise the IE shall not be included.

In the case of an Information Element group, the group is preceded by a name for the info group (in bold). It is also indicated how many times a group may be repeated in the message and whether the group is conditional. Each group may be also repeated within one message. The presence field of the Information Elements inside one group defines if the Information Element is mandatory, optional or conditional if the group is present.

##### 9.1.2.2 Criticality

Each information element or Group of information elements may have criticality information applied to it. Following cases are possible:

<b>-</b>	No criticality information is applied explicitly.
<b>YES</b>	Criticality information is applied. 'YES' is usable only for non-repeatable information elements.
<b>GLOBAL</b>	The information element and all its repetitions together have one common criticality information. 'GLOBAL' is usable only for repeatable information elements.
<b>EACH</b>	Each repetition of the information element has its own criticality information. It is not allowed to assign different criticality values to the repetitions. 'EACH' is usable only for repeatable information elements.

##### 9.1.2.3 Range

The Range column indicates the allowed number of copies of repetitive IEs/IE groups.

##### 9.1.2.4 Assigned Criticality

This column provides the actual criticality information as defined in subclause 10.3.2, if applicable.

## 9.1.3 RADIO LINK SETUP REQUEST

### 9.1.3.1 FDD Message

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Type	M		9.2.1.40		YES	reject
Transaction ID	M		9.2.1.59		–	
SRNC-ID	M		RNC-ID 9.2.1.50		YES	reject
S-RNTI	M		9.2.1.53		YES	reject
D-RNTI	O		9.2.1.24		YES	reject
Allowed Queuing Time	O		9.2.1.2		YES	reject
<b>UL DPCH Information</b>		1			YES	reject
>UL Scrambling Code	M		9.2.2.53		–	
>Min UL Channelisation Code Length	M		9.2.2.25		–	
>Max Number of UL DPDCHs	C – CodeLen		9.2.2.24		–	
>Puncture Limit	M		9.2.1.46	For the UL.	–	
>TFCS	M		9.2.1.63		–	
>UL DPCH Slot Format	M		9.2.2.52		–	
>Uplink SIR Target	O		Uplink SIR 9.2.1.69		–	
>Diversity mode	M		9.2.2.8		–	
>SSDT Cell Identity Length	O		9.2.2.41		–	
>S Field Length	O		9.2.2.36		–	
>DPC Mode	O		9.2.2.12A		YES	reject
>UL DPCH Indicator for E-DCH operation	C- EDCHInfo		ENUMERATED (UL-DPDCH present, UL-DPDCH not present)		YES	reject
<b>E-DPCH Information</b>		0..1			YES	reject
>Min UL Channelisation Code Length for E-DCH FDD	M		9.2.2.25A		=	
>Max Number of UL E-DPDCHs	C- CodeLenE DCH		9.2.2.24e	more than one E-DPDCHs possible in case of SF=2	=	
>Puncture Limit	M		9.2.1.50		=	
>E-TFCS	M		9.2.1.63A		=	
>E-TTI	M		ENUMERATED (2ms, 10ms)		=	
<b>DL DPCH Information</b>		1			YES	reject
>TFCS	M		9.2.1.63		–	
>DL DPCH Slot Format	M		9.2.2.9		–	
>Number of DL Channelisation Codes	M		9.2.2.26A		–	
>TFCI Signalling Mode	M		9.2.2.46		–	
>TFCI Presence	C- SlotFormat		9.2.1.55		–	
>Multiplexing Position	M		9.2.2.26		–	
<b>&gt;Power Offset Information</b>		1			–	
>>PO1	M		Power Offset	Power offset for the TFCI	–	

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
			9.2.2.30	bits.		
>>PO2	M		Power Offset 9.2.2.30	Power offset for the TPC bits.	–	
>>PO3	M		Power Offset 9.2.2.30	Power offset for the pilot bits.	–	
>FDD TPC Downlink Step Size	M		9.2.2.16		–	
>Limited Power Increase	M		9.2.2.21A		–	
>Inner Loop DL PC Status	M		9.2.2.21a		–	
>Split Type	O		9.2.2.39a		YES	reject
>Length of TFCI2	O		9.2.2.21C		YES	reject
DCH Information	M		DCH FDD Information 9.2.2.4A		YES	reject
DSCH Information	O		DSCH FDD Information 9.2.2.13A		YES	reject
<b>RL Information</b>		<i>1...&lt;max number of RLS&gt;</i>			EACH	notify
>RL ID	M		9.2.1.49		–	
>C-ID	M		9.2.1.6		–	
>First RLS Indicator	M		9.2.2.16A		–	
>Frame Offset	M		9.2.1.30		–	
>Chip Offset	M		9.2.2.1		–	
>Propagation Delay	O		9.2.2.33		–	
>Diversity Control Field	C – NotFirstRL		9.2.1.20		–	
>Initial DL TX Power	O		DL Power 9.2.1.21A		–	
>Primary CPICH Ec/No	O		9.2.2.32		–	
>SSDT Cell Identity	O		9.2.2.40		–	
>Transmit Diversity Indicator	C – Diversity mode		9.2.2.48		–	
>SSDT Cell Identity for EDSCHPC	C- EDSCHPC		9.2.2.40A		YES	ignore
>Enhanced Primary CPICH Ec/No	O		9.2.2.13l		YES	ignore
>RL Specific DCH Information	O		9.2.1.49A		YES	ignore
>Delayed Activation	O		9.2.1.19Aa		YES	reject
>Qth Parameter	O		9.2.2.34a		YES	ignore
>Cell Portion ID	O		9.2.2.E		YES	ignore
<a href="#">&gt; RL specific E-DCH Information</a>	<a href="#">O</a>		<a href="#">E-DCH MAC-d Flows Information 9.2.1.30C</a>		<a href="#">YES</a>	<a href="#">reject</a>
<a href="#">&gt;E-DCH RL Indication</a>	<a href="#">O</a>		<a href="#">9.2.2.4E</a>		<a href="#">YES</a>	<a href="#">reject</a>
Transmission Gap Pattern Sequence Information	O		9.2.2.47A		YES	reject
Active Pattern Sequence Information	O		9.2.2.A		YES	reject
Permanent NAS UE Identity	O		9.2.1.73		YES	ignore
DL Power Balancing Information	O		9.2.2.10A		YES	ignore
HS-DSCH Information	O		HS-DSCH FDD Information		YES	reject

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
			9.2.2.19a			
HS-PDSCH RL ID	C – InfoHSDSCH		RL ID 9.2.1.49		YES	reject
UE Support Of Dedicated Pilots For Channel Estimation	O		9.2.2.50A		YES	ignore
UE Support Of Dedicated Pilots For Channel Estimation Of HS-DSCH	O		9.2.2.50B		YES	ignore
<a href="#">E-DCH FDD Information</a>	<a href="#">O</a>		<a href="#">9.2.2.4B</a>		<a href="#">YES</a>	<a href="#">reject</a>
<a href="#">Serving E-DCH RL ID</a>	<a href="#">C-EDCHInfo</a>		<a href="#">RL ID 9.2.1.49</a>		<a href="#">YES</a>	<a href="#">reject</a>

Condition	Explanation
CodeLen	The IE shall be present if <i>Min UL Channelisation Code length</i> IE equals to 4
SlotFormat	The IE shall be present if the <i>DL DPCH Slot Format</i> IE is equal to any of the values from 12 to 16.
NotFirstRL	The IE shall be present if the RL is not the first one in the <i>RL Information</i> IE.
Diversity mode	The IE shall be present if <i>Diversity Mode</i> IE in <i>UL DPCH Information</i> IE is not equal to "none".
EDSCHPC	This IE shall be present if <i>Enhanced DSCH PC</i> IE is present in the <i>DSCH Information</i> IE.
InfoHSDSCH	This IE shall be present if <i>HS-DSCH Information</i> IE is present.
<a href="#">EDCHInfo</a>	<a href="#">This IE shall be present if <i>E-DPCH Information</i> IE is present.</a>
<a href="#">CodeLenEDCH</a>	<a href="#">The IE shall be present if <i>Min UL Channelisation Code length for E-DCH FDD</i> IE equals to 2</a>

Range bound	Explanation
<i>maxnoofRLs</i>	Maximum number of RLs for one UE.

## 9.1.3.2 TDD Message

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Type	M		9.2.1.40		YES	reject
Transaction ID	M		9.2.1.59		–	
SRNC-ID	M		RNC-ID 9.2.1.50		YES	reject
S-RNTI	M		9.2.1.53		YES	reject
D-RNTI	O		9.2.1.24		YES	reject
<b>UL Physical Channel Information</b>		1			YES	reject
>Maximum Number of Timeslots	M		9.2.3.3A	For the UL	–	
>Minimum Spreading Factor	M		9.2.3.4A	For the UL	–	
>Maximum Number of UL Physical Channels per Timeslot	M		9.2.3.3B		–	
>Support of 8PSK	O		9.2.3.7H	Applicable to 1.28Mcps TDD only	YES	ignore
<b>DL Physical Channel Information</b>		1			YES	reject
>Maximum Number of Timeslots	M		9.2.3.3A	For the DL	–	
>Minimum Spreading Factor	M		9.2.3.4A	For the DL	–	
>Maximum Number of DL Physical Channels	M		9.2.3.3C		–	
>Maximum Number of DL Physical Channels per Timeslot	O		9.2.3.3D		YES	ignore
>Support of 8PSK	O		9.2.3.7H	Applicable to 1.28Mcps TDD only	YES	ignore
Allowed Queuing Time	O		9.2.1.2		YES	reject
<b>UL CCTrCH Information</b>		0..<maxno of CCTrCHs>		For DCH and USCH	EACH	notify
>CCTrCH ID	M		9.2.3.2		–	
>TFCS	M		9.2.1.63	For the UL.	–	
>TFCI Coding	M		9.2.3.11		–	
>Puncture Limit	M		9.2.1.46		–	
>TDD TPC Uplink Step Size	O		9.2.3.10a	Mandatory for 1.28Mcps TDD, not applicable to 3.84Mcps TDD	YES	reject
<b>DL CCTrCH Information</b>		0..<maxno of CCTrCHs>		For DCH and DSCH	EACH	notify
>CCTrCH ID	M		9.2.3.2		–	
>TFCS	M		9.2.1.63	For the DL.	–	
>TFCI Coding	M		9.2.3.11		–	
>Puncture Limit	M		9.2.1.46		–	
>TDD TPC Downlink Step Size	M		9.2.3.10		–	
<b>&gt;TPC CCTrCH List</b>		0..<maxno CCTrCHs>		List of uplink CCTrCH which provide TPC	–	
>>TPC CCTrCH ID	M		CCTrCH ID 9.2.3.2		–	
DCH Information	O		DCH TDD		YES	reject

			Information 9.2.3.2A			
DSCH Information	O		DSCH TDD Information 9.2.3.3a		YES	reject
USCH Information	O		9.2.3.15		YES	reject
<b>RL Information</b>		1			YES	reject
>RL ID	M		9.2.1.49		–	
>C-ID	M		9.2.1.6		–	
>Frame Offset	M		9.2.1.30		–	
>Special Burst Scheduling	M		9.2.3.7D		–	
>Primary CCPCH RSCP	O		9.2.3.5		–	
>DL Time Slot ISCP Info	O		9.2.3.2D	Applicable to 3.84Mcps TDD only	–	
>DL Time Slot ISCP Info LCR	O		9.2.3.2F	Applicable to 1.28Mcps TDD only	YES	reject
>TSTD Support Indicator	O		9.2.3.13F	Applicable to 1.28Mcps TDD only	YES	ignore
>RL Specific DCH Information	O		9.2.1.49A		YES	ignore
>Delayed Activation	O		9.2.1.19Aa		YES	reject
<b>&gt;UL Synchronisation Parameters LCR</b>		0..1		Mandatory for 1.28Mcps TDD. Not Applicable to 3.84Mcps TDD.	YES	ignore
>>Uplink Synchronisation Step Size	M		9.2.3.13J		–	
>>Uplink Synchronisation Frequency	M		9.2.3.13I		–	
>Primary CCPCH RSCP Delta	O		9.2.3.5a		YES	ignore
Permanent NAS UE Identity	O		9.2.1.73		YES	ignore
HS-DSCH Information	O		HS-DSCH TDD Information 9.2.3.3aa		YES	reject
HS-PDSCH RL ID	C - InfoHSDSCH		RL ID 9.2.1.49		YES	reject
PDSCH-RL-ID	O		RL ID 9.2.1.49		YES	ignore

Condition	Explanation
InfoHSDSCH	This IE shall be present if <i>HS-DSCH Information</i> IE is present.

Range bound	Explanation
<i>maxnoofCCTrCHs</i>	Maximum number of CCTrCH for one UE.



## 9.1.4 RADIO LINK SETUP RESPONSE

### 9.1.4.1 FDD Message

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Type	M		9.2.1.40		YES	reject
Transaction ID	M		9.2.1.59		–	
D-RNTI	O		9.2.1.24		YES	ignore
CN PS Domain Identifier	O		9.2.1.12		YES	ignore
CN CS Domain Identifier	O		9.2.1.11		YES	ignore
<b>RL Information Response</b>		<i>1..&lt;maxno ofRLs&gt;</i>			EACH	ignore
>RL ID	M		9.2.1.49		–	
>RL Set ID	M		9.2.2.35		–	
>URA Information	O		9.2.1.70B		–	
>SAI	M		9.2.1.52		–	
>Cell GAI	O		9.2.1.5A		–	
>UTRAN Access Point Position	O		9.2.1.70A		–	
>Received Total Wide Band Power	M		9.2.2.35A		–	
>Secondary CCPCH Info	O		9.2.2.37B		–	
>DL Code Information	M		FDD DL Code Information 9.2.2.14A		–	
>CHOICE <i>Diversity Indication</i>	M				–	
>> <i>Combining</i>					–	
>>> RL ID	M		9.2.1.49	Reference RL ID for the combining	–	
>>> DCH Information Response	O		9.2.1.16A		YES	ignore
>>> <a href="#">E-DCH FDD Information Response</a>	<u>O</u>		<a href="#">9.2.2.4C</a>		<u>YES</u>	<u>ignore</u>
>> <i>Non Combining or First RL</i>					–	
>>> DCH Information Response	M		9.2.1.16A		–	
>>> <a href="#">E-DCH FDD Information Response</a>	<u>M</u>		<a href="#">9.2.2.4C</a>		<u>YES</u>	<u>ignore</u>
>E-DCH RL Set ID	<u>O</u>		<a href="#">9.2.2.35</a>		<u>YES</u>	<u>ignore</u>
>E-DCH FDD DL Control Channel Information	<u>O</u>		<a href="#">9.2.2.4D</a>		<u>YES</u>	<u>ignore</u>
>SSDT Support Indicator	M		9.2.2.43		–	
>Maximum Uplink SIR	M		Uplink SIR 9.2.1.69		–	
>Minimum Uplink SIR	M		Uplink SIR 9.2.1.69		–	
>Closed Loop Timing Adjustment Mode	O		9.2.2.3A		–	
>Maximum Allowed UL Tx Power	M		9.2.1.35		–	
>Maximum DL TX Power	M		DL Power 9.2.1.21A		–	
>Minimum DL TX Power	M		DL Power 9.2.1.21A		–	
>Primary Scrambling Code	O		9.2.1.45		–	
>UL UARFCN	O		UARFCN 9.2.1.66	Corresponds to Nu in ref. [6]	–	
>DL UARFCN	O		UARFCN	Corresponds	–	

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
			9.2.1.66	to Nd in ref. [6]		
>Primary CPICH Power	M		9.2.1.44		–	
>DSCH Information Response	O		DSCH FDD Information Response 9.2.2.13B		YES	ignore
>Neighbouring UMTS Cell Information	O		9.2.1.41A		–	
>Neighbouring GSM Cell Information	O		9.2.1.41C		–	
>PC Preamble	M		9.2.2.27a		–	
>SRB Delay	M		9.2.2.39A		–	
>Cell GA Additional Shapes	O		9.2.1.5B		YES	ignore
>DL Power Balancing Activation Indicator	O		9.2.2.10B		YES	ignore
>TFCI PC Support Indicator	O		9.2.2.46A		YES	ignore
>HCS Prio	O		9.2.1.30N		YES	ignore
>Primary CPICH Usage For Channel Estimation	O		9.2.2.32A		YES	ignore
>Secondary CPICH Information	O		9.2.2.38A		YES	ignore
Uplink SIR Target	O		Uplink SIR 9.2.1.69		YES	ignore
Criticality Diagnostics	O		9.2.1.13		YES	ignore
DSCH-RNTI	O		9.2.1.26Ba		YES	ignore
HS-DSCH-RNTI	O		9.2.1.30P		YES	ignore
HS-DSCH Information Response	O		HS-DSCH FDD Information Response 9.2.2.19b		YES	ignore

Range bound	Explanation
<i>maxnoofRLs</i>	Maximum number of RLs for one UE.

## 9.1.4.2 TDD Message

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Type	M		9.2.1.40		YES	reject
Transaction ID	M		9.2.1.59		–	
D-RNTI	O		9.2.1.24		YES	ignore
CN PS Domain Identifier	O		9.2.1.12		YES	ignore
CN CS Domain Identifier	O		9.2.1.11		YES	ignore
<b>RL Information Response</b>		0..1		Mandatory for 3.84Mcps TDD , not applicable to 1.28Mcps TDD	YES	ignore
>RL ID	M		9.2.1.49		–	
>URA Information	O		9.2.1.70B		–	
>SAI	M		9.2.1.52		–	
>Cell GAI	O		9.2.1.5A		–	
>UTRAN Access Point Position	O		9.2.1.70A		–	
>UL Time Slot ISCP Info	M		9.2.3.13D		–	
>Maximum Uplink SIR	M		Uplink SIR 9.2.1.69		–	
>Minimum Uplink SIR	M		Uplink SIR 9.2.1.69		–	
>Maximum Allowed UL Tx Power	M		9.2.1.35		–	
>Maximum DL TX Power	M		DL Power 9.2.1.21A		–	
>Minimum DL TX Power	M		DL Power 9.2.1.21A		–	
>UARFCN	O		UARFCN 9.2.1.66	Corresponds to Nt in ref. [7]	–	
>Cell Parameter ID	O		9.2.1.8		–	
>Sync Case	O		9.2.1.54		–	
>SCH Time Slot	C-Case2		9.2.1.51		–	
>SCTD Indicator	O		9.2.1.78		–	
>PCCPCH Power	M		9.2.1.43		–	
>Timing Advance Applied	M		9.2.3.12A		–	
>Alpha Value	M		9.2.3.a		–	
>UL PhysCH SF Variation	M		9.2.3.13B		–	
>Synchronisation Configuration	M		9.2.3.7E		–	
>Secondary CCPCH Info TDD	O		9.2.3.7B		–	
<b>&gt;UL CCTrCH Information</b>		0..<maxno of CCTrCHs>		For DCH	GLOBAL	ignore
>>CCTrCH ID	M		9.2.3.2		–	
<b>&gt;&gt;UL DPCH Information</b>		0..1			YES	ignore
>>>Repetition Period	M		9.2.3.7		–	
>>>Repetition Length	M		9.2.3.6		–	
>>>TDD DPCH Offset	M		9.2.3.8A		–	
>>>UL Timeslot Information	M		9.2.3.13C		–	
>>Uplink SIR Target CCTrCH	O		Uplink SIR 9.2.1.69		YES	ignore
<b>&gt;DL CCTrCH Information</b>		0..<maxno of CCTrCHs>		For DCH	GLOBAL	ignore
>>CCTrCH ID	M		9.2.3.2		–	
<b>&gt;&gt;DL DPCH Information</b>		0..1			YES	ignore

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
>>>Repetition Period	M		9.2.3.7		–	
>>>Repetition Length	M		9.2.3.6		–	
>>>TDD DPCH Offset	M		9.2.3.8A		–	
>>>DL Timeslot Information	M		9.2.3.2C			
>>CCTrCH Maximum DL TX Power	O		DL Power 9.2.1.21A	Maximum allowed power on DPCH	YES	ignore
>>CCTrCH Minimum DL TX Power	O		DL Power 9.2.1.21A	Minimum allowed power on DPCH	YES	ignore
>DCH Information Response	O		9.2.1.16A		YES	ignore
<b>&gt;DSCH Information Response</b>		0 .. <maxnoof DSCHs>			GLOBAL	ignore
>>DSCH ID	M		9.2.1.26A		–	
>>DSCH Flow Control Information	M		9.2.1.26B		–	
>>Binding ID	O		9.2.1.3		–	
>>Transport Layer Address	O		9.2.1.62		–	
>>Transport Format Management	M		9.2.3.13		–	
<b>&gt;USCH Information Response</b>		0 .. <maxnoof USCHs>			GLOBAL	ignore
>>USCH ID	M		9.2.3.14		–	
>>Binding ID	O		9.2.1.3		–	
>>Transport Layer Address	O		9.2.1.62		–	
>>Transport Format Management	M		9.2.3.13		–	
>Neighbouring UMTS Cell Information	O		9.2.1.41A		–	
>Neighbouring GSM Cell Information	O		9.2.1.41C		–	
>Cell GA Additional Shapes	O		9.2.1.5B		YES	ignore
>HCS Prio	O		9.2.1.30N		YES	ignore
>Time Slot for SCH	C-Case1		Time Slot 9.2.1.56		YES	ignore
Uplink SIR Target	M		Uplink SIR 9.2.1.69		YES	ignore
Criticality Diagnostics	O		9.2.1.13		YES	ignore
<b>RL Information Response LCR</b>		0..1		Mandatory for 1.28Mcps TDD, not applicable to 1.28Mcps TDD	YES	ignore
>RL ID	M		9.2.1.49		–	
>URA Information	M		9.2.1.70B		–	
>SAI	M		9.2.1.52		–	
>Cell GAI	O		9.2.1.5A		–	
>UTRAN Access Point Position	O		9.2.1.70A		–	
>UL Time Slot ISCP Info LCR	M		9.2.3.13H		–	
>Maximum Uplink SIR	M		Uplink SIR 9.2.1.69		–	
>Minimum Uplink SIR	M		Uplink SIR 9.2.1.69		–	
>Maximum Allowed UL Tx	M		9.2.1.35		–	

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Power						
>Maximum DL TX Power	M		DL Power 9.2.1.21A		–	
>Minimum DL TX Power	M		DL Power 9.2.1.21A		–	
>UARFCN	O		UARFCN 9.2.1.66	Corresponds to Nt in ref. [7]	–	
>Cell Parameter ID	O		9.2.1.8		–	
>SCTD Indicator	O		9.2.1.78		–	
>PCCPCH Power	M		9.2.1.43		–	
>Alpha Value	M		9.2.3.a		–	
>UL PhysCH SF Variation	M		9.2.3.13B		–	
>Synchronisation Configuration	M		9.2.3.7E		–	
>Secondary CCPCH Info TDD LCR	O		9.2.3.7F		–	
<b>&gt;UL CCTrCH Information LCR</b>		<i>0..&lt;maxno ofCCTrCH sLCR&gt;</i>		For DCH	GLOBAL	ignore
>>CCTrCH ID	M		9.2.3.2		–	
<b>&gt;&gt;UL DPCH Information LCR</b>		<i>0..1</i>			YES	ignore
>>>Repetition Period	M		9.2.3.7		–	
>>>Repetition Length	M		9.2.3.6		–	
>>>TDD DPCH Offset	M		9.2.3.8A		–	
>>>UL Timeslot Information LCR	M		9.2.3.13G		–	
>>Uplink SIR Target CCTrCH	O		Uplink SIR 9.2.1.69		YES	ignore
<b>&gt;DL CCTrCH Information LCR</b>		<i>0..&lt;maxno ofCCTrCH sLCR&gt;</i>		For DCH	GLOBAL	ignore
>>CCTrCH ID	M		9.2.3.2		–	
<b>&gt;&gt;DL DPCH Information LCR</b>		<i>0..1</i>			YES	ignore
>>>Repetition Period	M		9.2.3.7		–	
>>>Repetition Length	M		9.2.3.6		–	
>>>TDD DPCH Offset	M		9.2.3.8A		–	
>>>DL Timeslot Information LCR	M		9.2.3.2E			
>>>TSTD Indicator	M		9.2.3.13E		–	
>DCH Information Response	O		9.2.1.16A		YES	ignore
<b>&gt;DSCH Information Response LCR</b>		<i>0 .. &lt;maxnoof DSCHsLC R&gt;</i>			GLOBAL	ignore
>>DSCH ID	M		9.2.1.26A		–	
>>DSCH Flow Control Information	M		9.2.1.26B		–	
>>Binding ID	O		9.2.1.3		–	
>>Transport Layer Address	O		9.2.1.62		–	
>>Transport Format Management	M		9.2.3.13		–	
<b>&gt;USCH Information Response LCR</b>		<i>0 .. &lt;maxnoof USCHsLC R&gt;</i>			GLOBAL	ignore
>>USCH ID	M		9.2.3.14		–	
>>Binding ID	O		9.2.1.3		–	
>>Transport Layer Address	O		9.2.1.62		–	
>>Transport Format	M		9.2.3.13		–	

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Management						
>Neighbouring UMTS Cell Information	O		9.2.1.41A		–	
>Neighbouring GSM Cell Information	O		9.2.1.41C		–	
>HCS Prio	O		9.2.1.30N		YES	ignore
>Cell GA Additional Shapes	O		9.2.1.5B		YES	ignore
>Uplink Timing Advance Control LCR	M		9.2.3.13K		YES	ignore
HS-DSCH-RNTI	O		9.2.1.30P		YES	ignore
HS-DSCH Information Response	O		HS-DSCH TDD Information Response 9.2.3.3ab		YES	ignore
DSCH RNTI	O		9.2.1.26Ba		YES	ignore

Condition	Explanation
Case2	The IE shall be present if <i>Sync Case</i> IE is equal to "Case2".
Case1	This IE shall be present if <i>Sync Case</i> IE is equal to "Case1".

Range bound	Explanation
<i>maxnoofDSCHs</i>	Maximum number of DSCHs for one UE for 3.84Mcps TDD.
<i>maxnoofUSCHs</i>	Maximum number of USCHs for one UE for 3.84Mcps TDD.
<i>maxnoofCCTrCHs</i>	Maximum number of CCTrCH for one UE for 3.84Mcps TDD.
<i>maxnoofDSCHsLCR</i>	Maximum number of DSCHs for one UE for 1.28Mcps TDD.
<i>maxnoofUSCHsLCR</i>	Maximum number of USCHs for one UE for 1.28Mcps TDD.
<i>maxnoofCCTrCHsLCR</i>	Maximum number of CCTrCH for one UE for 1.28Mcps TDD.

## 9.1.5 RADIO LINK SETUP FAILURE

### 9.1.5.1 FDD Message

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Type	M		9.2.1.40		YES	reject
Transaction ID	M		9.2.1.59		–	
D-RNTI	O		9.2.1.24		YES	ignore
CN PS Domain Identifier	O		9.2.1.12		YES	ignore
CN CS Domain Identifier	O		9.2.1.11		YES	ignore
CHOICE Cause Level	M				YES	ignore
>General					–	
>>Cause	M		9.2.1.5		–	
>RL Specific					–	
>>Unsuccessful RL Information Response		1..<maxno ofRLs>			EACH	ignore
>>>RL ID	M		9.2.1.49		–	
>>>Cause	M		9.2.1.5		–	
>>Successful RL Information Response		0..<maxno ofRLs-1>			EACH	ignore
>>>RL ID	M		9.2.1.49		–	
>>>RL Set ID	M		9.2.2.35		–	
>>>URA Information	O		9.2.1.70B		–	
>>>SAI	M		9.2.1.52		–	
>>>Cell GAI	O		9.2.1.5A		–	
>>>UTRAN Access Point Position	O		9.2.1.70A		–	
>>>Received Total Wide Band Power	M		9.2.2.35A		–	
>>>Secondary CCPCH Info	O		9.2.2.37B		–	
>>>DL Code Information	M		FDD DL Code Information 9.2.2.14A		–	
>>>CHOICE Diversity Indication	M				–	
>>>>Combining					–	
>>>>>RL ID	M		9.2.1.49	Reference RL ID for the combining	–	
>>>>>DCH Information Response	O		9.2.1.16A		YES	ignore
>>>>> E-DCH FDD Information Response	<u>O</u>		<u>9.2.2.4C</u>		<u>YES</u>	<u>ignore</u>
>>>>>Non Combining or First RL					–	
>>>>>DCH Information Response	M		9.2.1.16A		–	
>>>>> E-DCH FDD Information Response	<u>O</u>		<u>9.2.2.4C</u>		<u>YES</u>	<u>ignore</u>
>>>> E-DCH RL Set ID	<u>O</u>		<u>9.2.2.35</u>		<u>YES</u>	<u>ignore</u>
>>>> E-DCH FDD DL Control Channel Information	<u>O</u>		<u>9.2.2.4D</u>		<u>YES</u>	<u>ignore</u>
>>>SSDT Support Indicator	M		9.2.2.43		–	
>>>Maximum Uplink SIR	M		Uplink SIR 9.2.1.69		–	
>>>Minimum Uplink SIR	M		Uplink SIR 9.2.1.69		–	

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
>>>Closed Loop Timing Adjustment Mode	O		9.2.2.3A		–	
>>>Maximum Allowed UL Tx Power	M		9.2.1.35		–	
>>>Maximum DL TX Power	M		DL Power 9.2.1.21A		–	
>>>Minimum DL TX Power	M		DL Power 9.2.1.21A		–	
>>>Primary CPICH Power	M		9.2.1.44		–	
>>>Primary Scrambling Code	O		9.2.1.45		–	
>>>UL UARFCN	O		UARFCN 9.2.1.66	Corresponds to Nu in ref. [6]	–	
>>>DL UARFCN	O		UARFCN 9.2.1.66	Corresponds to Nd in ref. [6]	–	
>>>DSCH Information Response	O		DSCH FDD Information Response 9.2.2.13B		YES	ignore
>>>Neighbouring UMTS Cell Information	O		9.2.1.41A		–	
>>>Neighbouring GSM Cell Information	O		9.2.1.41C		–	
>>>PC Preamble	M		9.2.2.27a		–	
>>>SRB Delay	M		9.2.2.39A		–	
>>>Cell GA Additional Shapes	O		9.2.1.5B		YES	ignore
>>>DL Power Balancing Activation Indicator	O		9.2.2.10B		YES	ignore
>>>TFCI PC Support Indicator	O		9.2.2.46A		YES	ignore
>>>HCS Prio	O		9.2.1.30N		YES	ignore
>>>Primary CPICH Usage For Channel Estimation	O		9.2.2.32A		YES	ignore
>>>Secondary CPICH Information	O		9.2.2.38A		YES	ignore
>>DSCH-RNTI	O		9.2.1.26Ba		YES	ignore
>>HS-DSCH-RNTI	O		9.2.1.30P		YES	ignore
>>HS-DSCH Information Response	O		HS-DSCH FDD Information Response 9.2.2.19b		YES	ignore
Uplink SIR Target	O		Uplink SIR 9.2.1.69		YES	ignore
Criticality Diagnostics	O		9.2.1.13		YES	ignore

Range bound	Explanation
<i>maxnoofRLs</i>	Maximum number of RLs for one UE.



## 9.1.5.2 TDD Message

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Type	M		9.2.1.40		YES	reject
Transaction ID	M		9.2.1.59		–	
CHOICE <i>Cause Level</i>	M				YES	ignore
> <i>General</i>					–	
>>Cause	M		9.2.1.5		–	
> <i>RL Specific</i>					–	
>> <b>Unsuccessful RL Information Response</b>		1			YES	ignore
>>>RL ID	M		9.2.1.49		–	
>>>Cause	M		9.2.1.5		–	
Criticality Diagnostics	O		9.2.1.13		YES	ignore

## 9.1.6 RADIO LINK ADDITION REQUEST

## 9.1.6.1 FDD Message

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Type	M		9.2.1.40		YES	reject
Transaction ID	M		9.2.1.59		–	
Uplink SIR Target	M		Uplink SIR 9.2.1.69		YES	reject
<b>RL Information</b>		<i>1..&lt;maxn oofRLs- 1&gt;</i>			EACH	notify
>RL ID	M		9.2.1.49		–	
>C-ID	M		9.2.1.6		–	
>Frame Offset	M		9.2.1.30		–	
>Chip Offset	M		9.2.2.1		–	
>Diversity Control Field	M		9.2.1.20		–	
>Primary CPICH Ec/No	O		9.2.2.32		–	
>SSDT Cell Identity	O		9.2.2.40			
>Transmit Diversity Indicator	O		9.2.2.48		–	
>DL Reference Power	O		DL Power 9.2.1.21A	Power on DPCH	YES	ignore
>Enhanced Primary CPICH Ec/No	O		9.2.2.13I		YES	ignore
>RL Specific DCH Information	O		9.2.1.49A		YES	ignore
<a href="#">&gt; RL specific E-DCH Information</a>	<a href="#">O</a>		<a href="#">E-DCH MAC-d Flows Information 9.2.1.30O C</a>		<a href="#">YES</a>	<a href="#">reject</a>
<a href="#">&gt;E-DCH RL Indication</a>	<a href="#">O</a>		<a href="#">9.2.2.4E</a>		<a href="#">YES</a>	<a href="#">reject</a>
>Delayed Activation	O		9.2.1.19Aa		YES	reject
>Qth Parameter	O		9.2.2.34a		YES	ignore
Active Pattern Sequence Information	O		9.2.2A	Either all the already active Transmission Gap Sequence(s) are addressed (Transmission Gap Pattern sequence shall overlap with the existing one) or none of the transmission gap sequences is activated.	YES	reject
DPC Mode	O		9.2.2.12A		YES	reject
Permanent NAS UE Identity	O		9.2.1.73		YES	ignore
<a href="#">Serving E-DCH RL ID</a>	<a href="#">C- EDCHInfo</a>		<a href="#">RL ID 9.2.1.49</a>		<a href="#">YES</a>	<a href="#">reject</a>

Range bound	Explanation
<i>maxnoofRLs</i>	Maximum number of radio links for one UE.

Condition	Explanation
<a href="#">EDCHInfo</a>	<a href="#">This IE shall be present if RL specific E-DCH Information IE is present for at least one RL indicated in the message.</a>

### 9.1.6.2 TDD Message

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Type	M		9.2.1.40		YES	reject
Transaction ID	M		9.2.1.59		–	
<b>RL Information</b>		1			YES	reject
>RL ID	M		9.2.1.49		–	
>C-ID	M		9.2.1.6		–	
>Frame Offset	M		9.2.1.30		–	
>Diversity Control Field	M		9.2.1.20		–	
>Primary CCPCH RSCP	O		9.2.3.5		–	
>DL Time Slot ISCP Info	O		9.2.3.2D	Applicable to 3.84Mcps TDD only	–	
>DL Time Slot ISCP Info LCR	O		9.2.3.2F	Applicable to 1.28Mcps TDD only	YES	reject
>RL Specific DCH Information	O		9.2.1.49A		YES	ignore
>Delayed Activation	O		9.2.1.19Aa		YES	reject
<b>&gt;UL Synchronisation Parameters LCR</b>		0..1		Mandatory for 1.28Mcps TDD. Not Applicable to 3.84Mcps TDD.	YES	ignore
>>Uplink Synchronisation Step Size	M		9.2.3.13J		–	
>>Uplink Synchronisation Frequency	M		9.2.3.13I		–	
> Primary CCPCH RSCP Delta	O		9.2.3.5a		YES	ignore
Permanent NAS UE Identity	O		9.2.1.73		YES	ignore
<b>UL CCTrCH Information</b>		0..< <i>maxno of CCTr CHs</i> >			EACH	notify
>CCTrCH ID	M		9.2.3.2		–	
>TDD TPC Uplink Step Size	O		9.2.3.10a	Applicable to 1.28Mcps TDD only	–	
<b>DL CCTrCH Information</b>		0..< <i>maxno of CCTr CHs</i> >			EACH	notify
>CCTrCH ID	M		9.2.3.2		–	
>TDD TPC Downlink Step Size	O		9.2.3.10		–	

Range bound	Explanation
<i>maxnoofCCTrCHs</i>	Maximum number of CCTrCH for one UE.

## 9.1.7 RADIO LINK ADDITION RESPONSE

### 9.1.7.1 FDD Message

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Type	M		9.2.1.40		YES	reject
Transaction ID	M		9.2.1.59		–	
<b>RL Information Response</b>		<i>1..&lt;maxnoof RLS-1&gt;</i>			EACH	ignore
>RL ID	M		9.2.1.49		–	
>RL Set ID	M		9.2.2.35		–	
>URA Information	O		9.2.1.70B		–	
>SAI	M		9.2.1.52		–	
>Cell GAI	O		9.2.1.5A		–	
>UTRAN Access Point Position	O		9.2.1.70A		–	
>Received Total Wide Band Power	M		9.2.2.35A		–	
>Secondary CCPCH Info	O		9.2.2.37B		–	
>DL Code Information	M		FDD DL Code Information 9.2.2.14A		YES	ignore
>CHOICE <i>Diversity Indication</i>	M				–	
>> <i>Combining</i>					–	
>>>RL ID	M		9.2.1.49	Reference RL ID	–	
>>>DCH Information Response	O		9.2.1.16A		YES	ignore
>>>E-DCH FDD Information Response	<u>O</u>		<u>9.2.2.4C</u>		<u>YES</u>	<u>ignore</u>
>> <i>Non Combining</i>					–	
>>>DCH Information Response	M		9.2.1.16A		–	
>>>E-DCH FDD Information Response	<u>O</u>		<u>9.2.2.4C</u>		<u>YES</u>	<u>ignore</u>
>E-DCH RL Set ID	<u>O</u>		<u>9.2.2.35</u>		<u>YES</u>	<u>ignore</u>
>E-DCH FDD DL Control Channel Information	<u>O</u>		<u>9.2.2.4D</u>		<u>YES</u>	<u>ignore</u>
>SSDT Support Indicator	M		9.2.2.43		–	
>Minimum Uplink SIR	M		Uplink SIR 9.2.1.69		–	
>Maximum Uplink SIR	M		Uplink SIR 9.2.1.69		–	
>Closed Loop Timing Adjustment Mode	O		9.2.2.3A		–	
>Maximum Allowed UL Tx Power	M		9.2.1.35		–	
>Maximum DL TX Power	M		DL Power 9.2.1.21A		–	
>Minimum DL TX Power	M		DL Power 9.2.1.21A		–	
>Neighbouring UMTS Cell Information	O		9.2.1.41A		–	
>Neighbouring GSM Cell Information	O		9.2.1.41C		–	
>PC Preamble	M		9.2.2.27a		–	
>SRB Delay	M		9.2.2.39A		–	
>Primary CPICH Power	M		9.2.1.44		–	
>Cell GA Additional Shapes	O		9.2.1.5B		YES	ignore

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
>DL Power Balancing Activation Indicator	O		9.2.2.10B		YES	ignore
>TFCI PC Support Indicator	O		9.2.2.46A		YES	ignore
>HCS Prio	O		9.2.1.30N		YES	ignore
>Primary CPICH Usage For Channel Estimation	O		9.2.2.32A		YES	ignore
Criticality Diagnostics	O		9.2.1.13		YES	ignore

Range bound	Explanation
<i>maxnoofRLs</i>	Maximum number of radio links for one UE.

## 9.1.7.2 TDD Message

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Type	M		9.2.1.40		YES	reject
Transaction ID	M		9.2.1.59		–	
<b>RL Information Response</b>		0..1		Mandatory for 3.84Mcps TDD, not applicable to 1.28Mcps TDD	YES	ignore
>RL ID	M		9.2.1.49		–	
>URA Information	O		9.2.1.70B		–	
>SAI	M		9.2.1.52		–	
>Cell GAI	O		9.2.1.5A		–	
>UTRAN Access Point Position	O		9.2.1.70A		–	
>UL Time Slot ISCP Info	M		9.2.3.13D		–	
>Minimum Uplink SIR	M		Uplink SIR 9.2.1.69		–	
>Maximum Uplink SIR	M		Uplink SIR 9.2.1.69		–	
>Maximum Allowed UL Tx Power	M		9.2.1.35		–	
>Maximum DL TX Power	M		DL Power 9.2.1.21A		–	
>Minimum DL TX Power	M		DL Power 9.2.1.21A		–	
>PCCPCH Power	M		9.2.1.43		–	
>Timing Advance Applied	M		9.2.3.12A		–	
>Alpha Value	M		9.2.3.a		–	
>UL PhysCH SF Variation	M		9.2.3.13B		–	
>Synchronisation Configuration	M		9.2.3.7E		–	
>Secondary CCPCH Info TDD	O		9.2.3.7B		–	
<b>&gt;UL CCTrCH Information</b>		0..<maxnoof CCTrCHs>		For DCH	GLOBAL	ignore
>>CCTrCH ID	M		9.2.3.2		–	
<b>&gt;&gt;UL DPCH Information</b>		0..1			YES	ignore
>>>Repetition Period	M		9.2.3.7		–	
>>>Repetition Length	M		9.2.3.6		–	
>>>TDD DPCH Offset	M		9.2.3.8A		–	
>>>UL Timeslot Information	M		9.2.3.13C		–	
<b>&gt;DL CCTrCH Information</b>		0..<maxnoof CCTrCHs>		For DCH	GLOBAL	ignore
>>CCTrCH ID	M		9.2.3.2		–	
<b>&gt;&gt;DL DPCH Information</b>		0..1			YES	ignore
>>>Repetition Period	M		9.2.3.7		–	
>>>Repetition Length	M		9.2.3.6		–	
>>>TDD DPCH Offset	M		9.2.3.8A		–	
>>>DL Timeslot Information	M		9.2.3.2C		–	
>>CCTrCH Maximum DL TX Power	O		DL Power 9.2.1.21A	Maximum allowed power on DPCH	YES	ignore
>>CCTrCH Minimum DL TX Power	O		DL Power 9.2.1.21A	Minimum allowed power on DPCH	YES	ignore

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
<b>&gt;DCH Information</b>		0..1			–	
>>CHOICE <i>Diversity Indication</i>	M				–	
>>> <i>Combining</i>					–	
>>>>RL ID	M		9.2.1.49	Reference RL	–	
>>>>DCH Information Response	O		9.2.1.16A		YES	ignore
>>> <i>Non Combining</i>					–	
>>>>DCH Information Response	M		9.2.1.16A		–	
<b>&gt;DSCH Information Response</b>		0 .. <maxnoof DSCHs>			GLOBAL	ignore
>>DSCH ID	M		9.2.1.26A		–	
>>Transport Format Management	M		9.2.3.13		–	
>>DSCH Flow Control Information	M		9.2.1.26B		–	
>>CHOICE <i>Diversity Indication</i>	O				–	
>>> <i>Non Combining</i>					–	
>>>>Binding ID	O		9.2.1.3		–	
>>>>Transport Layer Address	O		9.2.1.62		–	
<b>&gt;USCH Information Response</b>		0 .. <maxnoof USCHs>			GLOBAL	ignore
>>USCH ID	M		9.2.3.14		–	
>>Transport Format Management	M		9.2.3.13		–	
>>CHOICE <i>Diversity Indication</i>	O				–	
>>> <i>Non Combining</i>					–	
>>>>Binding ID	O		9.2.1.3		–	
>>>>Transport Layer Address	O		9.2.1.62		–	
>Neighbouring UMTS Cell Information	O		9.2.1.41A		–	
>Neighbouring GSM Cell Information	O		9.2.1.41C		–	
>Cell GA Additional Shapes	O		9.2.1.5B		YES	ignore
>HCS Prio	O		9.2.1.30N		YES	ignore
Criticality Diagnostics	O		9.2.1.13		YES	ignore
<b>RL Information Response LCR</b>		0..1		Mandatory for 1.28Mcps TDD, not applicable to 3.84Mcps TDD	YES	ignore
>RL ID	M		9.2.1.49		–	
>URA Information	M		9.2.1.70B		–	
>SAI	M		9.2.1.52		–	
>Cell GAI	O		9.2.1.5A		–	
>UTRAN Access Point Position	O		9.2.1.70A		–	
>UL Time Slot ISCP Info LCR	M		9.2.3.13H		–	
>Maximum Uplink SIR	M		Uplink SIR 9.2.1.69		–	



IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
>Minimum Uplink SIR	M		Uplink SIR 9.2.1.69		–	
>PCCPCH Power	M		9.2.1.43		–	
>Maximum Allowed UL Tx Power	M		9.2.1.35		–	
>Maximum DL TX Power	M		DL Power 9.2.1.21A		–	
>Minimum DL TX Power	M		DL Power 9.2.1.21A		–	
>Alpha Value	M		9.2.3.a		–	
>UL PhysCH SF Variation	M		9.2.3.13B		–	
>Synchronisation Configuration	M		9.2.3.7E		–	
>Secondary CCPCH Info TDD LCR	O		9.2.3.7F		–	
<b>&gt;UL CCTrCH Information LCR</b>		<i>0..&lt;maxnoof CCTrCHsLCR&gt;</i>		For DCH	GLOBAL	ignore
>>CCTrCH ID	M		9.2.3.2		–	
<b>&gt;&gt;UL DPCH Information LCR</b>		<i>0..1</i>			YES	ignore
>>>Repetition Period	M		9.2.3.7		–	
>>>Repetition Length	M		9.2.3.6		–	
>>>TDD DPCH Offset	M		9.2.3.8A		–	
>>>UL Timeslot Information LCR	M		9.2.3.13G		–	
<b>&gt;DL CCTrCH Information LCR</b>		<i>0..&lt;maxnoof CCTrCHsLCR&gt;</i>		For DCH	GLOBAL	ignore
>>CCTrCH ID	M		9.2.3.2		–	
<b>&gt;&gt;DL DPCH Information LCR</b>		<i>0..1</i>			YES	ignore
>>>Repetition Period	M		9.2.3.7		–	
>>>Repetition Length	M		9.2.3.6		–	
>>>TDD DPCH Offset	M		9.2.3.8A		–	
>>>DL Timeslot Information LCR	M		9.2.3.2E		–	
>>>TSTD Indicator	M		9.2.3.13E		–	
>DCH Information Response	M		9.2.1.16A		–	
<b>&gt;DSCH Information Response LCR</b>		<i>0 .. &lt;maxnoof DSCHsLCR&gt;</i>			GLOBAL	ignore
>>DSCH ID	M		9.2.1.26A		–	
>>DSCH Flow Control Information	M		9.2.1.26B		–	
>>Binding ID	O		9.2.1.3		–	
>>Transport Layer Address	O		9.2.1.62		–	
>>Transport Format Management	M		9.2.3.13		–	
<b>&gt;USCH Information Response LCR</b>		<i>0 .. &lt;maxnoof USCHsLCR&gt;</i>			GLOBAL	ignore
>>USCH ID	M		9.2.3.14		–	
>>Transport Format Management	M		9.2.3.13		–	
>>CHOICE Diversity Indication	O				–	
>>>Non Combining					–	
>>>>Binding ID	O		9.2.1.3		–	

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
>>>>Transport Layer Address	O		9.2.1.62		–	
>Neighbouring UMTS Cell Information	O		9.2.1.41A		–	
>Neighbouring GSM Cell Information	O		9.2.1.41C		–	
>Cell GA Additional Shapes	O		9.2.1.5B		YES	ignore
>HCS Prio	O		9.2.1.30N		YES	ignore
>Uplink Timing Advance Control LCR	M		9.2.3.13K		YES	ignore

Range Bound	Explanation
<i>maxnoofDSCHs</i>	Maximum number of DSCHs for one UE for 3.84Mcps TDD.
<i>maxnoofUSCHs</i>	Maximum number of USCHs for one UE for 3.84Mcps TDD.
<i>maxnoofCCTrCHs</i>	Maximum number of CCTrCHs for one UE for 3.84Mcps TDD.
<i>maxnoofDSCHsLCR</i>	Maximum number of DSCHs for one UE for 1.28Mcps TDD.
<i>maxnoofUSCHsLCR</i>	Maximum number of USCHs for one UE for 1.28Mcps TDD.
<i>maxnoofCCTrCHsLCR</i>	Maximum number of CCTrCH for one UE for 1.28Mcps TDD.

## 9.1.8 RADIO LINK ADDITION FAILURE

## 9.1.8.1 FDD Message

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Type	M		9.2.1.40		YES	reject
Transaction ID	M		9.2.1.59		–	
CHOICE Cause Level	M				YES	ignore
>General					–	
>>Cause	M		9.2.1.5		–	
>RL Specific					–	
>>Unsuccessful RL Information Response		1..<maxnoof RLS-1>			EACH	ignore
>>>RL ID	M		9.2.1.49		–	
>>>Cause	M		9.2.1.5		–	
>>Successful RL Information Response		0..<maxnoof RLS-2>			EACH	ignore
>>>RL ID	M		9.2.1.49		–	
>>>RL Set ID	M		9.2.2.35		–	
>>>URA Information	O		9.2.1.70B		–	
>>>SAI	M		9.2.1.52		–	
>>>Cell GAI	O		9.2.1.5A		–	
>>>UTRAN Access Point Position	O		9.2.1.70A		–	
>>>Received Total Wide Band Power	M		9.2.2.35A		–	
>>>Secondary CCPCH Info	O		9.2.2.37B		–	
>>>DL Code Information	M		FDD DL Code Information 9.2.2.14A		YES	ignore
>>>CHOICE Diversity Indication	M				–	
>>>>Combining					–	
>>>>>RL ID	M		9.2.1.49	Reference RL ID	–	
>>>>>DCH Information Response	O		9.2.1.16A		YES	ignore
>>>>>E-DCH FDD Information Response	<u>M</u>		<u>9.2.2.4C</u>		<u>YES</u>	<u>ignore</u>
>>>>>Non Combining					–	
>>>>>DCH Information Response	M		9.2.1.16A		–	
>>>>>E-DCH FDD Information Response	<u>M</u>		<u>9.2.2.4C</u>		<u>YES</u>	<u>ignore</u>
>>>E-DCH RL Set ID	<u>O</u>		<u>9.2.2.35</u>		<u>YES</u>	<u>ignore</u>
>>>E-DCH FDD DL Control Channel Information	<u>O</u>		<u>9.2.2.4D</u>		<u>YES</u>	<u>ignore</u>
>>>SSDT Support Indicator	M		9.2.2.43		–	
>>>Minimum Uplink SIR	M		Uplink SIR 9.2.1.69		–	
>>>Maximum Uplink SIR	M		Uplink SIR 9.2.1.69		–	
>>>Closed Loop Timing Adjustment Mode	O		9.2.2.3A		–	
>>>Maximum Allowed	M		9.2.1.35		–	

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
UL Tx Power						
>>>Maximum DL TX Power	M		DL Power 9.2.1.21A		–	
>>>Minimum DL TX Power	M		DL Power 9.2.1.21A		–	
>>>Neighbouring UMTS Cell Information	O		9.2.1.41A		–	
>>>Neighbouring GSM Cell Information	O		9.2.1.41C		–	
>>>Primary CPICH Power	M		9.2.1.44		–	
>>>PC Preamble	M		9.2.2.27a		–	
>>>SRB Delay	M		9.2.2.39A		–	
>>>Cell GA Additional Shapes	O		9.2.1.5B		YES	ignore
>>>DL Power Balancing Activation Indicator	O		9.2.2.10B		YES	ignore
>>>TFCI PC Support Indicator	O		9.2.2.46A		YES	ignore
>>>HCS Prio	O		9.2.1.30N		YES	ignore
>>>Primary CPICH Usage For Channel Estimation	O		9.2.2.32A		YES	ignore
Criticality Diagnostics	O		9.2.1.13		YES	ignore

Range bound	Explanation
<i>maxnoofRLs</i>	Maximum number of radio links for one UE.

### 9.1.8.2 TDD Message

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Type	M		9.2.1.40		YES	reject
Transaction ID	M		9.2.1.59		–	
CHOICE Cause Level	M				YES	ignore
>General					–	
>>Cause	M		9.2.1.5		–	
>RL Specific					–	
>>Unsuccessful RL Information Response		1			YES	ignore
>>>RL ID	M		9.2.1.49		–	
>>>Cause	M		9.2.1.5		–	
Criticality Diagnostics	O		9.2.1.13		YES	ignore

### 9.1.9 RADIO LINK DELETION REQUEST

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Type	M		9.2.1.40		YES	reject
Transaction ID	M		9.2.1.59		–	
RL Information		1..<maxno ofRLs>			EACH	notify
>RL ID	M		9.2.1.49		–	

Range bound	Explanation
<i>maxnoofRLs</i>	Maximum number of radio links for one UE

### 9.1.10 RADIO LINK DELETION RESPONSE

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Type	M		9.2.1.40		YES	reject
Transaction ID	M		9.2.1.59		–	
Criticality Diagnostics	O		9.2.1.13		YES	ignore

## 9.1.11 RADIO LINK RECONFIGURATION PREPARE

## 9.1.11.1 FDD Message

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Type	M		9.2.1.40		YES	reject
Transaction ID	M		9.2.1.59		–	
Allowed Queuing Time	O		9.2.1.2		YES	reject
<b>UL DPCH Information</b>		0..1			YES	reject
>UL Scrambling Code	O		9.2.2.53		–	
>UL SIR Target	O		Uplink SIR 9.2.1.69		–	
>Min UL Channelisation Code Length	O		9.2.2.25		–	
>Max Number of UL DPDCHs	C – CodeLen		9.2.2.24		–	
>Puncture Limit	O		9.2.1.46	For the UL.	–	
>TFCS	O		9.2.1.63	TFCS for the UL.	–	
>UL DPCCH Slot Format	O		9.2.2.52		–	
>Diversity Mode	O		9.2.2.8		–	
>SSDT Cell Identity Length	O		9.2.2.41		–	
>S-Field Length	O		9.2.2.36		–	
>UL DPDCH Indicator for E-DCH operation	C- EDCHInfo		<a href="#">ENUMERATED (UL-DPDCH present, UL-DPDCH not present)</a>		<a href="#">YES</a>	<a href="#">reject</a>
<b>DL DPCH Information</b>		0..1			YES	reject
>TFCS	O		9.2.1.63	TFCS for the DL.	–	
>DL DPCH Slot Format	O		9.2.2.9		–	
>Number of DL Channelisation Codes	O		9.2.2.26A		–	
>TFCI Signalling Mode	O		9.2.2.46		–	
>TFCI Presence	C- SlotFormat		9.2.1.55		–	
>Multiplexing Position	O		9.2.2.26		–	
>Limited Power Increase	O		9.2.2.21A		–	
>Split Type	O		9.2.2.39a		YES	reject
>Length of TFCI2	O		9.2.2.21C		YES	reject
<b>E-DPCH Information</b>		0..1			<a href="#">YES</a>	<a href="#">reject</a>
>Min UL Channelisation Code Length for E-DCH FDD	<a href="#">O</a>		<a href="#">9.2.2.25A</a>		<a href="#">=</a>	
>Max Number of E-DPDCHs	C- CodeLenE DCH		<a href="#">9.2.2.24e</a>	<a href="#">more than one E-DPDCHs possible in case of SF=2</a>	<a href="#">=</a>	
>Puncture Limit	<a href="#">O</a>		<a href="#">9.2.1.50</a>		<a href="#">=</a>	
>E-TFCS	<a href="#">O</a>		<a href="#">9.2.1.63A</a>		<a href="#">=</a>	
>E-TTI	<a href="#">O</a>		<a href="#">ENUMER</a>		<a href="#">=</a>	

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
			<a href="#">ATED (2ms, 10ms)</a>			
DCHs To Modify	O		FDD DCHs To Modify 9.2.2.13C		YES	reject
DCHs To Add	O		DCH FDD Information 9.2.2.4A		YES	reject
<b>DCHs To Delete</b>		<i>0..&lt;maxnoof DCHs&gt;</i>			GLOBAL	reject
>DCH ID	M		9.2.1.16		–	
<b>DSCHs To Modify</b>		<i>0..1</i>			YES	reject
>DSCH Info		<i>0..&lt;maxnoof DSCHs&gt;</i>			–	
>>DSCH ID	M		9.2.1.26A		–	
>>TrCH Source Statistics Descriptor	O		9.2.1.65		–	
>>Transport Format Set	O		9.2.1.64	For DSCH	–	
>>Allocation/Retention Priority	O		9.2.1.1		–	
>>Scheduling Priority Indicator	O		9.2.1.51A		–	
>>BLER	O		9.2.1.4		–	
>>Transport Bearer Request Indicator	M		9.2.1.61		–	
>>Traffic Class	O		9.2.1.58A		YES	ignore
>>Binding ID	O		9.2.1.3	Shall be ignored if bearer establishment with ALCAP.	YES	ignore
>>Transport Layer Address	O		9.2.1.62	Shall be ignored if bearer establishment with ALCAP.	YES	ignore
>PDSCH RL ID	O		RL ID 9.2.1.49		–	
>TFCS	O		9.2.1.63	For DSCH	–	
>Enhanced DSCH PC Indicator	O		9.2.2.13F		YES	ignore
>Enhanced DSCH PC	C-EDSCHPC On		9.2.2.13D		YES	ignore
DSCHs To Add	O		DSCH FDD Information 9.2.2.13A		YES	reject
<b>DSCHs to Delete</b>		<i>0..1</i>			YES	reject
>DSCH Info		<i>1..&lt;maxnoof DSCHs&gt;</i>			–	
>>DSCH ID	M		9.2.1.26A		–	
<b>RL Information</b>		<i>0..&lt;maxnoof RLS&gt;</i>			EACH	reject
>RL ID	M		9.2.1.49		–	
>SSDT Indication	O		9.2.2.42		–	
>SSDT Cell Identity	C - SSSTIndON		9.2.2.40		–	

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
>Transmit Diversity Indicator	C – Diversity mode		9.2.2.48		–	
>SSDT Cell Identity for EDSCHPC	C-EDSCHPC		9.2.2.40A		YES	ignore
>DL Reference Power	O		DL Power 9.2.1.21A	Power on DPCH	YES	ignore
>RL Specific DCH Information	O		9.2.1.49A		YES	ignore
>DL DPCH Timing Adjustment	O		9.2.2.9A	Required RL Timing Adjustment	YES	reject
>Qth Parameter	O		9.2.2.34a		YES	ignore
>Phase Reference Update Indicator	O		9.2.2.27B		YES	ignore
<a href="#">&gt; RL specific E-DCH Information</a>	<a href="#">O</a>		<a href="#">E-DCH MAC-d Flows Information 9.2.1.30C</a>		<a href="#">YES</a>	<a href="#">reject</a>
<a href="#">&gt;E-DCH MAC-d Flows to Add</a>	<a href="#">O</a>		<a href="#">E-DCH MAC-d Flows Information 9.2.1.30C</a>		<a href="#">YES</a>	<a href="#">reject</a>
<a href="#">&gt;E-DCH MAC-d Flows to Delete</a>	<a href="#">O</a>		<a href="#">9.2.2.30D</a>		<a href="#">YES</a>	<a href="#">reject</a>
<a href="#">&gt;E-DCH RL Indication</a>	<a href="#">O</a>		<a href="#">9.2.2.4E</a>		<a href="#">YES</a>	<a href="#">reject</a>
Transmission Gap Pattern Sequence Information	O		9.2.2.47A		YES	reject
HS-DSCH Information	O		HS-DSCH FDD Information 9.2.2.19a		YES	reject
HS-DSCH Information To Modify	O		9.2.1.30Q		YES	reject
HS-DSCH MAC-d Flows To Add	O		HS-DSCH MAC-d Flows Information 9.2.1.30OA		YES	reject
HS-DSCH MAC-d Flows To Delete	O		9.2.1.30OB		YES	reject
HS-PDSCH RL ID	O		RL ID 9.2.1.49		YES	reject
UE Support Of Dedicated Pilots For Channel Estimation	O		9.2.2.50A		YES	ignore
UE Support Of Dedicated Pilots For Channel Estimation Of HS-DSCH	O		9.2.2.50B		YES	ignore
<a href="#">E-DCH FDD Information</a>	<a href="#">O</a>		<a href="#">9.2.2.4B</a>		<a href="#">YES</a>	<a href="#">reject</a>
<a href="#">E-DCH FDD Information to Modify</a>	<a href="#">O</a>		<a href="#">9.2.2.4F</a>		<a href="#">YES</a>	<a href="#">reject</a>
<a href="#">Serving E-DCH RL ID</a>	<a href="#">O</a>		<a href="#">RL ID 9.2.1.49</a>		<a href="#">YES</a>	<a href="#">reject</a>



Condition	Explanation
SSTIndON	The IE shall be present if the <i>SST Indication</i> IE is set to "SST Active in the UE".
CodeLen	The IE shall be present only if the <i>Min UL Channelisation Code length</i> IE equals to 4.
SlotFormat	The IE shall only be present if the <i>DL DPCH Slot Format</i> IE is equal to any of the values from 12 to 16.
Diversity mode	The IE shall be present if <i>Diversity Mode</i> IE is present in the <i>UL DPCH Information</i> IE and is not equal to "none".
EDSCHPCOn	The IE shall be present if the <i>Enhanced DSCH PC Indicator</i> IE is set to "Enhanced DSCH PC Active in the UE".
EDSCHPC	The IE shall be present if <i>Enhanced DSCH PC</i> IE is present in either the <i>DSCHs To Modify</i> IE or the <i>DSCHs To Add</i> IE.
<a href="#">EDCHInfo</a>	<a href="#">This IE shall be present if <i>E-DPCH Information</i> IE is present.</a>
<a href="#">CodeLenEDCH</a>	<a href="#">The IE shall be present if <i>Min UL Channelisation Code length for E-DCH FDD</i> IE equals to [2 or 4]</a>

Range bound	Explanation
<i>maxnoofDCHs</i>	Maximum number of DCHs for a UE.
<i>maxnoofDSCHs</i>	Maximum number of DSCHs for one UE.
<i>maxnoofRLs</i>	Maximum number of RLs for a UE.

## 9.1.11.2 TDD Message

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Type	M		9.2.1.40		YES	reject
Transaction ID	M		9.2.1.59		–	
Allowed Queuing Time	O		9.2.1.2		YES	reject
<b>UL CCH To Add</b>		0..<maxno of CCHs>		For DCH and USCH	EACH	notify
>CCH ID	M		9.2.3.2		–	
>TFCS	M		9.2.1.63	For the UL.	–	
>TFCI Coding	M		9.2.3.11		–	
>Puncture Limit	M		9.2.1.46		–	
>UL SIR Target	O		Uplink SIR 9.2.1.69	Mandatory for 1.28Mcps TDD; not applicable to 3.84Mcps TDD	YES	reject
>TDD TPC Uplink Step Size	O		9.2.3.10a	Mandatory for 1.28Mcps TDD, not applicable to 3.84Mcps TDD	YES	reject
<b>UL CCH To Modify</b>		0..<maxno of CCHs>			EACH	notify
>CCH ID	M		9.2.3.2		–	
>TFCS	O		9.2.1.63	For the UL.	–	
>TFCI Coding	O		9.2.3.11		–	
>Puncture Limit	O		9.2.1.46		–	
>UL SIR Target	O		Uplink SIR 9.2.1.69	Applicable to 1.28Mcps TDD only	YES	reject
>TDD TPC Uplink Step Size	O		9.2.3.10a	Applicable to 1.28Mcps TDD only	YES	reject
<b>UL CCH to Delete</b>		0..<maxno of CCHs>			EACH	notify
>CCH ID	M		9.2.3.2		–	
<b>DL CCH To Add</b>		0..<maxno of CCHs>		For DCH and DSCH	EACH	notify
>CCH ID	M		9.2.3.2		–	
>TFCS	M		9.2.1.63	For the DL.	–	
>TFCI Coding	M		9.2.3.11		–	
>Puncture Limit	M		9.2.1.46		–	
<b>&gt;TPC CCH List</b>		0..<maxno CCHs>		List of uplink CCH which provide TPC	–	
>>TPC CCH ID	M		CCH ID 9.2.3.2		–	
>TDD TPC Downlink Step Size	O		9.2.3.10		YES	reject
<b>DL CCH To Modify</b>		0..<maxno of CCHs>			EACH	notify
>CCH ID	M		9.2.3.2		–	
>TFCS	O		9.2.1.63	For the DL.	–	

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
>TFCI Coding	O		9.2.3.11		–	
>Puncture Limit	O		9.2.1.46		–	
<b>&gt;TPC CCTrCH List</b>		<i>0..&lt;maxno CCTrCHs&gt;</i>		List of uplink CCTrCH which provide TPC	–	
>>TPC CCTrCH ID	M		CCTrCH ID 9.2.3.2		–	
>TDD TPC Downlink Step Size	O		9.2.3.10		YES	reject
<b>DL CCTrCH to Delete</b>		<i>0..&lt;maxno ofCCTrCHs&gt;</i>			EACH	notify
>CCTrCH ID	M		9.2.3.2		–	
DCHs To Modify	O		TDD DCHs To Modify 9.2.3.8B		YES	reject
DCHs To Add	O		DCH TDD Information 9.2.3.2A		YES	reject
<b>DCHs to Delete</b>		<i>0..&lt;maxno ofDCHs&gt;</i>			GLOBAL	reject
>DCH ID	M		9.2.1.16		–	
<b>DSCHs To Modify</b>		<i>0..&lt;maxno ofDSCHs&gt;</i>			GLOBAL	reject
>DSCH ID	M		9.2.1.26A		–	
>CCTrCH ID	O		9.2.3.2	DL CCTrCH in which the DSCH is mapped.	–	
>TrCH Source Statistics Descriptor	O		9.2.1.65		–	
>Transport Format Set	O		9.2.1.64		–	
>Allocation/Retention Priority	O		9.2.1.1		–	
>Scheduling Priority Indicator	O		9.2.1.51A		–	
>BLER	O		9.2.1.4		–	
>Transport Bearer Request Indicator	M		9.2.1.61		–	
>Traffic Class	O		9.2.1.58A		YES	ignore
>Binding ID	O		9.2.1.3	Shall be ignored if bearer establishment with ALCAP.	YES	ignore
>Transport Layer Address	O		9.2.1.62	Shall be ignored if bearer establishment with ALCAP.	YES	ignore
DSCHs To Add	O		DSCH TDD Information 9.2.3.3a		YES	reject
<b>DSCHs to Delete</b>		<i>0..&lt;maxno ofDSCHs&gt;</i>			GLOBAL	reject
>DSCH ID	M		9.2.1.26A		–	
<b>USCHs To Modify</b>		<i>0..&lt;maxno</i>			GLOBAL	reject

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
		<i>ofUSCHs&gt;</i>				
>USCH ID	M		9.2.3.14		–	
>CCTrCH ID	O		9.2.3.2	UL CCTrCH in which the USCH is mapped.	–	
>TrCH Source Statistics Descriptor	O		9.2.1.65		–	
>Transport Format Set	O		9.2.1.64		–	
>Allocation/Retention Priority	O		9.2.1.1		–	
>Scheduling Priority Indicator	O		9.2.1.51A		–	
>BLER	O		9.2.1.4		–	
>Transport Bearer Request Indicator	M		9.2.1.61		–	
>TNL QoS	O		9.2.1.56A		YES	ignore
<b>&gt;RB Info</b>		<i>0..&lt;maxno ofRB&gt;</i>		All Radio Bearers using this USCH	–	
>>RB Identity	M		9.2.3.5B		–	
>Traffic class	O		9.2.1.58A		YES	ignore
>Binding ID	O		9.2.1.3	Shall be ignored if bearer establishment with ALCAP.	YES	ignore
>Transport Layer Address	O		9.2.1.62	Shall be ignored if bearer establishment with ALCAP.	YES	ignore
USCHs To Add	O		USCH Information 9.2.3.15		YES	reject
<b>USCHs to Delete</b>		<i>0..&lt;maxno ofUSCHs&gt;</i>			GLOBAL	reject
>USCH ID	M		9.2.3.14		–	
Primary CCPCH RSCP	O		9.2.3.5		YES	ignore
DL Time Slot ISCP Info	O		9.2.3.2D	Applicable to 3.84Mcps TDD only	YES	ignore
DL Time Slot ISCP Info LCR	O		9.2.3.2F	Applicable to 1.28Mcps TDD only	YES	ignore
HS-DSCH Information	O		HS-DSCH TDD Information 9.2.3.3aa		YES	reject
HS-DSCH Information To Modify	O		9.2.1.30Q		YES	reject
HS-DSCH MAC-d Flows To Add	O		HS-DSCH MAC-d Flows Information 9.2.1.30OA		YES	reject
HS-DSCH MAC-d Flows To Delete	O		9.2.1.30OB		YES	reject
HS-PDSCH RL ID	O		RL ID 9.2.1.49		YES	reject

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
PDSCH-RL-ID	O		RL ID 9.2.1.49		YES	ignore
<b>UL Synchronisation Parameters LCR</b>		<i>0..1</i>		Mandatory for 1.28Mcps TDD. Not Applicable to 3.84Mcps TDD.	YES	ignore
>Uplink Synchronisation Step Size	M		9.2.3.13J		–	
>Uplink Synchronisation Frequency	M		9.2.3.13I		–	
<b>RL Information</b>		<i>0..&lt;maxno ofRLs.</i>			YES	ignore
>RL ID	M		9.2.1.49		–	
>RL Specific DCH Information	O		9.2.1.49A		–	
Primary CCPCH RSCP Delta	O		9.2.3.5a		YES	ignore

Range bound	Explanation
<i>maxnoofDCHs</i>	Maximum number of DCHs for a UE.
<i>maxnoofCCTrCHs</i>	Maximum number of CCTrCHs for a UE.
<i>maxnoofDSCHs</i>	Maximum number of DSCHs for one UE.
<i>maxnoofUSCHs</i>	Maximum number of USCHs for one UE.
<i>maxnoofRLs</i>	Maximum number of RLs for one UE

## 9.1.12 RADIO LINK RECONFIGURATION READY

## 9.1.12.1 FDD Message

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Type	M		9.2.1.40		YES	reject
Transaction ID	M		9.2.1.59		–	
<b>RL Information Response</b>		<i>0..&lt;maxno ofRLs&gt;</i>			EACH	ignore
>RL ID	M		9.2.1.49		–	
>Maximum Uplink SIR	O		Uplink SIR 9.2.1.69		–	
>Minimum Uplink SIR	O		Uplink SIR 9.2.1.69		–	
>Maximum DL TX Power	O		DL Power 9.2.1.21A		–	
>Minimum DL TX Power	O		DL Power 9.2.1.21A		–	
>Secondary CCPCH Info	O		9.2.2.37B		–	
>DL Code Information	O		FDD DL Code Information 9.2.2.14A		YES	ignore
>DCH Information Response	O		9.2.1.16A		YES	ignore
>DSCHs to be Added or Modified	O		DSCH FDD Information Response 9.2.2.13B		YES	ignore
>DL Power Balancing Updated Indicator	O		9.2.2.10D		YES	ignore
>Primary CPICH Usage For Channel Estimation	O		9.2.2.32A		YES	ignore
>Secondary CPICH Information Change	O		9.2.2.38B		YES	ignore
<a href="#">&gt; E-DCH FDD Information Response</a>	<a href="#">O</a>		<a href="#">9.2.2.4C</a>		<a href="#">YES</a>	<a href="#">ignore</a>
<a href="#">&gt;E-DCH RL Set ID</a>	<a href="#">O</a>		<a href="#">9.2.2.35</a>		<a href="#">YES</a>	<a href="#">ignore</a>
<a href="#">&gt;E-DCH FDD DL Control Channel Information</a>	<a href="#">O</a>		<a href="#">9.2.2.4D</a>		<a href="#">YES</a>	<a href="#">ignore</a>
Criticality Diagnostics	O		9.2.1.13		YES	ignore
DSCH-RNTI	O		9.2.1.26Ba		YES	ignore
HS-DSCH-RNTI	O		9.2.1.30P		YES	ignore
HS-DSCH Information Response	O		HS-DSCH FDD Information Response 9.2.2.19b		YES	ignore
MAC-hs Reset Indicator	O		9.2.1.34B		YES	ignore

Range bound	Explanation
<i>maxnoofRLs</i>	Maximum number of RLs for a UE.

## 9.1.12.2 TDD Message

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Type	M		9.2.1.40		YES	reject
Transaction ID	M		9.2.1.59		–	
<b>RL Information Response</b>		<i>0..&lt;maxnoof RLs&gt;</i>		See Note 1 below	YES	ignore
>RL ID	M		9.2.1.49		–	
>Maximum Uplink SIR	O		Uplink SIR 9.2.1.69		–	
>Minimum Uplink SIR	O		Uplink SIR 9.2.1.69		–	
>Maximum DL TX Power	O		DL Power 9.2.1.21A		–	
>Minimum DL TX Power	O		DL Power 9.2.1.21A		–	
>Secondary CCPCH Info TDD	O		9.2.3.7B		–	
<b>&gt;UL CCTrCH Information</b>		<i>0..&lt;maxnoof CCTrCHs&gt;</i>		For DCH	GLOBAL	ignore
>>CCTrCH ID	M		9.2.3.2		–	
<b>&gt;&gt;UL DPCH to be Added</b>		<i>0..1</i>		Applicable to 3.84Mcps TDD only	YES	ignore
>>>Repetition Period	M		9.2.3.7		–	
>>>Repetition Length	M		9.2.3.6		–	
>>>TDD DPCH Offset	M		9.2.3.8A		–	
>>> Rx Timing Deviation	O		9.2.3.7A		–	
>>>UL Timeslot Information	M		9.2.3.13C		–	
<b>&gt;&gt;UL DPCH to be Modified</b>		<i>0..1</i>			YES	ignore
>>>Repetition Period	O		9.2.3.7		–	
>>>Repetition Length	O		9.2.3.6		–	
>>>TDD DPCH Offset	O		9.2.3.8A		–	
<b>&gt;&gt;&gt;UL Timeslot Information</b>		<i>0..&lt;maxnoOf fTS&gt;</i>		Applicable to 3.84Mcps TDD only	–	
>>>>Time Slot	M		9.2.1.56		–	
>>>>Midamble Shift And Burst Type	O		9.2.3.4		–	
>>>>TFCI Presence	O		9.2.1.55		–	
<b>&gt;&gt;&gt;&gt;UL Code Information</b>		<i>0..&lt;maxnoOf fDPCHs&gt;</i>			–	
>>>>>DPCH ID	M		9.2.3.3		–	
>>>>>TDD Channelisation Code	O		9.2.3.8		–	
<b>&gt;&gt;&gt;&gt;UL Timeslot Information LCR</b>		<i>0..&lt;maxnoOf fTSLCR&gt;</i>		Applicable to 1.28Mcps TDD only	GLOBAL	ignore
>>>>>Time Slot LCR	M		9.2.3.12a		–	
>>>>>Midamble Shift LCR	O		9.2.3.4C		–	
>>>>>TFCI Presence	O		9.2.1.55		–	

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
<b>&gt;&gt;&gt;&gt;UL Code Information LCR</b>		<i>0..&lt;maxnoOf fDPCHLCR&gt;</i>			GLOBAL	ignore
>>>>DPCH ID	M		9.2.3.3		–	
>>>>TDD Channelisation Code LCR	O		9.2.3.8a		–	
>>>> TDD UL DPCH Time Slot Format LCR	O		9.2.3.10C		YES	reject
<b>&gt;&gt;UL DPCH to be Deleted</b>		<i>0..&lt;maxnoof DPCHs&gt;</i>			GLOBAL	ignore
>>>DPCH ID	M		9.2.3.3		–	
<b>&gt;&gt;UL DPCH to be Added LCR</b>		<i>0..1</i>		Applicable to 1.28Mcps TDD only	YES	ignore
>>>Repetition Period	M		9.2.3.7		–	
>>>Repetition Length	M		9.2.3.6		–	
>>>TDD DPCH Offset	M		9.2.3.8A		–	
>>>UL Timeslot Information LCR	M		9.2.3.13G		–	
<b>&gt;DL CCTrCH Information</b>		<i>0..&lt;maxnoof CCTrCHs&gt;</i>		For DCH	GLOBAL	ignore
>>CCTrCH ID	M		9.2.3.2		–	
<b>&gt;&gt;DL DPCH to be Added</b>		<i>0..1</i>		Applicable to 3.84Mcps TDD only	YES	ignore
>>>Repetition Period	M		9.2.3.7		–	
>>>Repetition Length	M		9.2.3.6		–	
>>>TDD DPCH Offset	M		9.2.3.8A		–	
>>>DL Timeslot Information	M		9.2.3.2C		–	
<b>&gt;&gt;DL DPCH to be Modified</b>		<i>0..1</i>			YES	ignore
>>>Repetition Period	O		9.2.3.7		–	
>>>Repetition Length	O		9.2.3.6		–	
>>>TDD DPCH Offset	O		9.2.3.8A		–	
<b>&gt;&gt;&gt;DL Timeslot Information</b>		<i>0..&lt;maxnoOf fTS&gt;</i>		Applicable to 3.84Mcps TDD only	–	
>>>>Time Slot	M		9.2.1.56		–	
>>>>Midamble Shift And Burst Type	O		9.2.3.4		–	
>>>>TFCI Presence	O		9.2.1.55		–	
<b>&gt;&gt;&gt;&gt;DL Code Information</b>		<i>0..&lt;maxnoOf fDPCHs&gt;</i>			–	
>>>>>DPCH ID	M		9.2.3.3		–	
>>>>>TDD Channelisation Code	O		9.2.3.8		–	
<b>&gt;&gt;&gt;&gt;DL Timeslot Information LCR</b>		<i>0..&lt;maxnoOf fTSLCR&gt;</i>		Applicable to 1.28Mcps TDD only	GLOBAL	ignore
>>>>>Time Slot LCR	M		9.2.3.12a		–	
>>>>>Midamble Shift LCR	O		9.2.3.4C		–	
>>>>>TFCI Presence	O		9.2.1.55		–	
<b>&gt;&gt;&gt;&gt;&gt;DL Code Information LCR</b>		<i>0..&lt;maxnoOf fDPCHLCR&gt;</i>			GLOBAL	ignore
>>>>>>DPCH ID	M		9.2.3.3		–	
>>>>>>TDD	O		9.2.3.8a		–	



IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Channelisation Code LCR						
>>>> TDD DL DPCH Time Slot Format LCR	O		9.2.3.8E		YES	reject
>>>>Maximum DL TX Power	O		DL Power 9.2.1.21A	Maximum allowed power on DPCH	YES	ignore
>>>>Minimum DL TX Power	O		DL Power 9.2.1.21A	Minimum allowed power on DPCH	YES	ignore
>>DL DPCH to be Deleted		0..<maxnoof DPCHs>			GLOBAL	ignore
>>>DPCH ID	M		9.2.3.3		–	
>>DL DPCH to be Added LCR		0..1		Applicable to 1.28Mcps TDD only	YES	ignore
>>>Repetition Period	M		9.2.3.7		–	
>>>Repetition Length	M		9.2.3.6		–	
>>>TDD DPCH Offset	M		9.2.3.8A		–	
>>>DL Timeslot Information LCR	M		9.2.3.2E		–	
>>CCTrCH Maximum DL TX Power	O		DL Power 9.2.1.21A	Maximum allowed power on DPCH Applicable to 3.84Mcps TDD only	YES	ignore
>>CCTrCH Minimum DL TX Power	O		DL Power 9.2.1.21A	Minimum allowed power on DPCH Applicable to 3.84Mcps TDD only	YES	ignore
>DCH Information Response	O		9.2.1.16A		YES	ignore
>DSCH to be Added or Modified		0 .. <maxnoof DSCHs>			GLOBAL	ignore
>>DSCH ID	M		9.2.1.26A		–	
>>Transport Format Management	M		9.2.3.13		–	
>>DSCH Flow Control Information	M		9.2.1.26B		–	
>>Binding ID	O		9.2.1.3		–	
>>Transport Layer Address	O		9.2.1.62		–	
>USCH to be Added or Modified		0 .. <maxnoof USCHs>			GLOBAL	ignore
>>USCH ID	M		9.2.3.14		–	
>>Transport Format Management	M		9.2.3.13		–	
>>Binding ID	O		9.2.1.3		–	
>>Transport Layer Address	O		9.2.1.62		–	
>Uplink Timing Advance Control LCR	O		9.2.3.13K	Applicable to 1.28Mcps TDD only	YES	ignore

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Criticality Diagnostics	O		9.2.1.13		YES	ignore
HS-DSCH-RNTI	O		9.2.1.30P		YES	ignore
HS-DSCH Information Response	O		HS-DSCH TDD Information Response 9.2.3.3ab		YES	ignore
DSCH-RNTI	O		9.2.1.26Ba		YES	ignore
MAC-hs Reset Indicator	O		9.2.1.34B		YES	ignore

Note 1: This information element is a simplified representation of the ASN.1. Repetition 1 and repetition 2 through maxnoofRLs are represented by separate ASN.1 structures with different criticalities.

Range bound	Explanation
<i>maxnoofDSCHs</i>	Maximum number of DSCHs for one UE.
<i>maxnoofUSCHs</i>	Maximum number of USCHs for one UE.
<i>maxnoofCCTrCHs</i>	Maximum number of CCTrCHs for a UE.
<i>maxnoofTS</i>	Maximum number of Timeslots for a UE for 3.84Mcps TDD.
<i>maxnoofDPCHs</i>	Maximum number of DPCH for a UE for 3.84Mcps TDD.
<i>maxnoofTSLCRs</i>	Maximum number of Timeslots for a UE for 1.28Mcps TDD.
<i>maxnoofDPCHLCRs</i>	Maximum number of DPCH for a UE for 1.28Mcps TDD.
<i>maxnoofRLs</i>	Maximum number of RLs for one UE

### 9.1.13 RADIO LINK RECONFIGURATION COMMIT

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Type	M		9.2.1.40		YES	ignore
Transaction ID	M		9.2.1.59		–	
CFN	M		9.2.1.9		YES	ignore
Active Pattern Sequence Information	O		9.2.2.A	FDD only	YES	ignore

### 9.1.14 RADIO LINK RECONFIGURATION FAILURE

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Type	M		9.2.1.40		YES	reject
Transaction ID	M		9.2.1.59		–	
CHOICE Cause Level	M				YES	ignore
>General					–	
>>Cause	M		9.2.1.5		–	
>RL Specific					–	
>>RLs Causing Reconfiguration Failure		0..<maxnoof RLs>			EACH	ignore
>>>RL ID	M		9.2.1.49		–	
>>>Cause	M		9.2.1.5		–	
Criticality Diagnostics	O		9.2.1.13		YES	ignore

Range bound	Explanation
<i>maxnoofRLs</i>	Maximum number of RLs for a UE.

### 9.1.15 RADIO LINK RECONFIGURATION CANCEL

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Type	M		9.2.1.40		YES	ignore
Transaction ID	M		9.2.1.59		–	

### 9.1.16 RADIO LINK RECONFIGURATION REQUEST

#### 9.1.16.1 FDD Message

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Type	M		9.2.1.40		YES	reject
Transaction ID	M		9.2.1.59		–	
Allowed Queuing Time	O		9.2.1.2		YES	reject
<b>UL DPCH Information</b>		<i>0..1</i>			YES	reject
>TFCS	O		9.2.1.63	TFCS for the UL.	–	
>UL DPDCH Indicator for E-DCH operation	<u>C-EDCHInfo</u>		<u>ENUMERATED (UL-DPDCH present, UL-DPDCH not present)</u>		<u>YES</u>	<u>reject</u>
<b>DL DPCH Information</b>		<i>0..1</i>			YES	reject
>TFCS	O		9.2.1.63	TFCS for the DL.	–	
>TFCI Signalling Mode	O		9.2.2.46		–	
>Limited Power Increase	O		9.2.2.21A		–	
<b>E-DPCH Information</b>		<i>0..1</i>			<u>YES</u>	<u>reject</u>
>E-TFCS	<u>O</u>		<u>9.2.1.63A</u>		<u>–</u>	

DCHs To Modify	O		FDD DCHs To Modify 9.2.2.13C		YES	reject
DCHs To Add	O		DCH FDD Information 9.2.2.4A		YES	reject
<b>DCHs To Delete</b>		<i>0..&lt;maxno ofDCHs&gt;</i>			GLOBAL	reject
>DCH ID	M		9.2.1.16		–	
Transmission Gap Pattern Sequence Information	O		9.2.2.47A		YES	reject
<b>RL Information</b>		<i>0..&lt;maxno ofRLs&gt;</i>			EACH	ignore
>RL ID	M		9.2.1.49		–	
>RL Specific DCH Information	O		9.2.1.49A		–	
<a href="#">&gt;RL specific E-DCH Information</a>	<a href="#">O</a>		<a href="#">E-DCH MAC-d Flows Information 9.2.1.300C</a>		<a href="#">YES</a>	<a href="#">reject</a>
<a href="#">&gt;E-DCH RL Indication</a>	<a href="#">O</a>		<a href="#">9.2.2.4E</a>		<a href="#">YES</a>	<a href="#">reject</a>
<a href="#">&gt;E-DCH MAC-d Flows to Add</a>	<a href="#">O</a>		<a href="#">E-DCH MAC-d Flows Information 9.2.1.300C</a>		<a href="#">YES</a>	<a href="#">reject</a>
<a href="#">&gt;E-DCH MAC-d Flows to Delete</a>	<a href="#">O</a>		<a href="#">9.2.2.300D</a>		<a href="#">YES</a>	<a href="#">reject</a>
DL Reference Power Information	O		9.2.2.10C		YES	ignore
UE Support Of Dedicated Pilots For Channel Estimation	O		9.2.2.50A		YES	ignore
UE Support Of Dedicated Pilots For Channel Estimation Of HS-DSCH	O		9.2.2.50B		YES	ignore
HS-DSCH Information	O		HS-DSCH FDD Information 9.2.2.19a		YES	reject
HS-DSCH Information To Modify Unsynchronised	O		9.2.1.30NA		YES	reject
HS-DSCH MAC-d Flows To Add	O		HS-DSCH MAC-d Flows Information 9.2.1.300A		YES	reject
HS-DSCH MAC-d Flows To Delete	O		9.2.1.300B		YES	reject
HS-PDSCH RL ID	O		RL ID 9.2.1.49		YES	reject
<a href="#">E-DCH FDD Information</a>	<a href="#">O</a>		<a href="#">9.2.2.4B</a>		<a href="#">YES</a>	<a href="#">reject</a>
<a href="#">E-DCH FDD Information to Modify</a>	<a href="#">O</a>		<a href="#">9.2.2.4F</a>		<a href="#">YES</a>	<a href="#">reject</a>

Range Bound	Explanation
<i>maxnoofDCHs</i>	Maximum number of DCHs for one UE.
<i>maxnoofRLs</i>	Maximum number of RLs for a UE.

<u>Condition</u>	<u>Explanation</u>
<a href="#">EDCHInfo</a>	<a href="#">This IE shall be present if <i>RL specific E-DCH Information IE</i> is present for at least one RL indicated in the message.</a>

## 9.1.16.2 TDD Message

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Type	M		9.2.1.40		YES	reject
Transaction ID	M		9.2.1.59		–	
Allowed Queuing Time	O		9.2.1.2		YES	reject
<b>UL CCTrCH Information To Modify</b>		0..<maxnoof CCTrCHs>			EACH	notify
>CCTrCH ID	M		9.2.3.2		–	
>TFCS	O		9.2.1.63		–	
>UL SIR Target	O		Uplink SIR 9.2.1.69	Applicable to 1.28Mcps TDD only	YES	reject
<b>UL CCTrCH Information to Delete</b>		0..<maxnoof CCTrCHs>			EACH	notify
>CCTrCH ID	M		9.2.3.2		–	
<b>DL CCTrCH Information To Modify</b>		0..<maxnoof CCTrCHs>			EACH	notify
>CCTrCH ID	M		9.2.3.2		–	
>TFCS	O		9.2.1.63		–	
<b>DL CCTrCH Information to Delete</b>		0..<maxnoof CCTrCHs>			EACH	notify
>CCTrCH ID	M		9.2.3.2		–	
DCHs To Modify	O		TDD DCHs To Modify 9.2.3.8B		YES	reject
DCHs To Add	O		DCH TDD Information 9.2.3.2A		YES	reject
<b>DCHs to Delete</b>		0..<maxnoof DCHs>			GLOBAL	reject
>DCH ID	M		9.2.1.16		–	
<b>RL Information</b>		0..<maxnoof RLs>			YES	ignore
>RL ID	M		9.2.1.49		–	
>RL Specific DCH Information	O		9.2.1.49A		–	
<b>UL Synchronisation Parameters LCR</b>		0..1		Mandatory for 1.28Mcps TDD. Not Applicable to 3.84Mcps TDD.	YES	ignore
>Uplink Synchronisation Step Size	M		9.2.3.13J		–	
>Uplink Synchronisation Frequency	M		9.2.3.13I		–	
HS-DSCH Information	O		HS-DSCH TDD Information 9.2.3.3aa		YES	reject
HS-DSCH Information To Modify Unsynchronised	O		9.2.1.30NA		YES	reject
HS-DSCH MAC-d Flows To Add	O		HS-DSCH MAC-d Flows Information 9.2.1.30OA		YES	reject
HS-DSCH MAC-d Flows To Delete	O		9.2.1.30OB		YES	reject
HS-PDSCH RL ID	O		RL ID 9.2.1.49		YES	reject

Range Bound	Explanation
<i>maxnoofCCTrCHs</i>	Maximum number of CCTrCHs for a UE.
<i>maxnoofDCHs</i>	Maximum number of DCHs for one UE.
<i>maxnoofRLs</i>	Maximum number of RLs for one UE

## 9.1.17 RADIO LINK RECONFIGURATION RESPONSE

### 9.1.17.1 FDD Message

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Type	M		9.2.1.40		YES	reject
Transaction ID	M		9.2.1.59		–	
<b>RL Information Response</b>		<i>0..&lt;maxno ofRLs&gt;</i>			EACH	ignore
>RL ID	M		9.2.1.49		–	
>Maximum Uplink SIR	O		Uplink SIR 9.2.1.69		–	
>Minimum Uplink SIR	O		Uplink SIR 9.2.1.69		–	
>Maximum DL TX Power	O		DL Power 9.2.1.21A		–	
>Minimum DL TX Power	O		DL Power 9.2.1.21A		–	
>Secondary CCPCH Info	O		9.2.2.37B		–	
>DCH Information Response	O		9.2.1.16A		YES	ignore
>DL Code Information	O		FDD DL Code Information 9.2.2.14A		YES	ignore
>DL Power Balancing Updated Indicator	O		9.2.2.10D		YES	ignore
> <a href="#">E-DCH FDD Information Response</a>	<a href="#">O</a>		<a href="#">9.2.2.4C</a>		<a href="#">YES</a>	<a href="#">ignore</a>
> <a href="#">E-DCH RL Set ID</a>	<a href="#">O</a>		<a href="#">9.2.2.35</a>		<a href="#">YES</a>	<a href="#">ignore</a>
> <a href="#">E-DCH FDD DL Control Channel Information</a>	<a href="#">O</a>		<a href="#">9.2.2.4D</a>		<a href="#">YES</a>	<a href="#">ignore</a>
Criticality Diagnostics	O		9.2.1.13		YES	ignore
HS-DSCH-RNTI	O		9.2.1.30P		YES	ignore
HS-DSCH Information Response	O		HS-DSCH FDD Information Response 9.2.2.19b		YES	ignore
MAC-hs Reset Indicator	O		9.2.1.34B		YES	ignore

Range Bound	Explanation
<i>maxnoofRLs</i>	Maximum number of RLs for a UE.

## 9.1.17.2 TDD Message

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Type	M		9.2.1.40		YES	reject
Transaction ID	M		9.2.1.59		–	
<b>RL Information Response</b>		<i>0..&lt;maxno ofRLs&gt;</i>		See note 1 below	YES	ignore
>RL ID	M		9.2.1.49		–	
>Maximum Uplink SIR	O		Uplink SIR 9.2.1.69		–	
>Minimum Uplink SIR	O		Uplink SIR 9.2.1.69		–	
>Maximum DL TX Power	O		DL Power 9.2.1.21A		–	
>Minimum DL TX Power	O		DL Power 9.2.1.21A		–	
>DCH Information Response	O		9.2.1.16A		YES	ignore
<b>&gt;DL CCTrCH Information</b>		<i>0..&lt;maxno ofCCTrCHs&gt;</i>		For DCH	GLOBAL	ignore
>>CCTrCH ID	M		9.2.3.2		–	
<b>&gt;&gt;DL DPCH To Modify LCR</b>		<i>0..1</i>		Applicable to 1.28Mcps TDD only	YES	ignore
<b>&gt;&gt;&gt;DL Timeslot Information LCR</b>		<i>0..&lt;maxno ofTSLCR&gt;</i>			–	
>>>>Time Slot LCR	M		9.2.3.12a		–	
>>>>Maximum DL TX Power	O		DL Power 9.2.1.21A	Maximum allowed power on DPCH	–	
>>>>Minimum DL TX Power	O		DL Power 9.2.1.21A	Minimum allowed power on DPCH	–	
>>CCTrCH Maximum DL TX Power	O		DL Power 9.2.1.21A	Maximum allowed power on DPCH Applicable to 3.84Mcps TDD only	YES	ignore
>>CCTrCH Minimum DL TX Power	O		DL Power 9.2.1.21A	Minimum allowed power on DPCH Applicable to 3.84Mcps TDD only	YES	ignore
>Uplink Timing Advance Control LCR	O		9.2.3.13K	Applicable to 1.28Mcps TDD only	YES	ignore
Criticality Diagnostics	O		9.2.1.13		YES	ignore
HS-DSCH-RNTI	O		9.2.1.30P		YES	ignore
HS-DSCH Information Response	O		HS-DSCH TDD Information Response 9.2.3.3ab		YES	ignore
MAC-hs Reset Indicator	O		9.2.1.34B		YES	ignore



Note 1: This information element is a simplified representation of the ASN.1. Repetition 1 and repetition 2 through *maxnoofRLs* are represented by separate ASN.1 structures with different criticalities.

Range bound	Explanation
<i>maxnoofCCTrCHs</i>	Maximum number of CCTrCHs for a UE.
<i>maxnoofTSLCRs</i>	Maximum number of Timeslots for a UE for 1.28Mcps TDD.
<i>maxnoofRLs</i>	Maximum number of RLs for one UE

### 9.1.18 RADIO LINK FAILURE INDICATION

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Type	M		9.2.1.40		YES	ignore
Transaction ID	M		9.2.1.59		–	
CHOICE <i>Reporting Object</i>	M			Object for which the Failure shall be reported.	YES	ignore
> <i>RL</i>					–	
>> <b>RL Information</b>		1 .. < <i>maxnoofRLs</i> >			EACH	ignore
>>>RL ID	M		9.2.1.49		–	
>>>Cause	M		9.2.1.5		–	
> <i>RLS</i>				FDD only	–	
>> <b>RL Set Information</b>		1 .. < <i>maxnoofRL Sets</i> >			EACH	ignore
>>>RL Set ID	M		9.2.2.35		–	
>>>Cause	M		9.2.1.5		–	
> <i>CCTrCH</i>				TDD only	–	
>>RL ID	M		9.2.1.49		–	
>> <b>CCTrCH List</b>		1..< <i>maxnoCCTrCHs</i> >			EACH	ignore
>>>CCTrCH ID	M		9.2.3.2		–	
>>>Cause	M		9.2.1.5		–	

Range bound	Explanation
<i>maxnoofRLs</i>	Maximum number of RLs for one UE.
<i>maxnoofRL Sets</i>	Maximum number of RL Sets for one UE.
<i>maxnoofCCTrCHs</i>	Maximum number of CCTrCHs for a UE.

## 9.1.19 RADIO LINK RESTORE INDICATION

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Type	M		9.2.1.40		YES	ignore
Transaction ID	M		9.2.1.59		–	
CHOICE <i>Reporting Object</i>	M			Object for which the Restoration shall be reported.	YES	ignore
>RL				TDD only	–	
>>RL Information		1 .. <maxno ofRLs>			EACH	ignore
>>>RL ID	M		9.2.1.49		–	
>RLS				FDD only	–	
>>RL Set Information		1 .. <maxno ofRLSets>			EACH	ignore
>>>RL Set ID	M		9.2.2.35		–	
>CCTrCH				TDD only		
>>RL ID	M		9.2.1.49		–	
>>>CCTrCH List		1..<maxnoCCTrCHs>			EACH	ignore
>>>CCTrCH ID	M		9.2.3.2		–	

Range bound	Explanation
<i>maxnoofRLs</i>	Maximum number of RLs for one UE.
<i>maxnoofRLSets</i>	Maximum number of RL Sets for one UE.
<i>maxnoofCCTrCHs</i>	Maximum number of CCTrCHs for a UE.

## 9.1.20 DL POWER CONTROL REQUEST [FDD]

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Type	M		9.2.1.40		YES	ignore
Transaction ID	M		9.2.1.59		–	
Power Adjustment Type	M		9.2.2.28		YES	ignore
DL Reference Power	C-Common		DL Power 9.2.1.21A		YES	ignore
Inner Loop DL PC Status	O		9.2.2.21a		YES	ignore
DL Reference Power Information	C-Individual	1..<maxnofRLs>			EACH	ignore
>RL ID	M		9.2.1.49		–	
>DL Reference Power	M		DL Power 9.2.1.21A		–	
Max Adjustment Step	C-Common O Individual		9.2.2.23		YES	ignore
Adjustment Period	C-Common O Individual		9.2.2.B		YES	ignore
Adjustment Ratio	C-Common O Individual		9.2.2.C		YES	ignore

Condition	Explanation
Common	The IE shall be present if the <i>Power Adjustment Type</i> IE is set to "Common".
Individual	The IE shall be present if the <i>Power Adjustment Type</i> IE is set to "Individual".
CommonOrIndividual	The IE shall be present if the <i>Power Adjustment Type</i> IE is set to "Common" or "Individual".

Range Bound	Explanation
<i>maxnoofRLs</i>	Maximum number of RLs for one UE.

## 9.1.21 PHYSICAL CHANNEL RECONFIGURATION REQUEST

### 9.1.21.1 FDD Message

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Type	M		9.2.1.40		YES	reject
Transaction ID	M		9.2.1.59		–	
<b>RL Information</b>		1			YES	reject
>RL ID	M		9.2.1.49		–	
>DL Code Information	M		FDD DL Code Information 9.2.2.14A		YES	notify

## 9.1.21.2 TDD Message

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Type	M		9.2.1.40		YES	reject
Transaction ID	M		9.2.1.59		–	
<b>RL Information</b>		1			YES	reject
>RL ID	M		9.2.1.49		–	
<b>&gt;UL CCTrCH Information</b>		0.. <maxnoof CCTrCHs>			GLOBAL	reject
>>CCTrCH ID	M		9.2.3.2		–	
<b>&gt;&gt;UL DPCH Information</b>		1			YES	notify
>>>Repetition Period	O		9.2.3.7		–	
>>>Repetition Length	O		9.2.3.6		–	
>>>TDD DPCH Offset	O		9.2.3.8A		–	
<b>&gt;&gt;&gt;UL Timeslot Information</b>		0..<maxno OfTTS>		Applicable to 3.84Mcps TDD only	–	
>>>>Time Slot	M		9.2.1.56		–	
>>>>Midamble Shift And Burst Type	O		9.2.3.4		–	
>>>>TFCI Presence	O		9.2.1.55		–	
>>>>UL Code Information	O		TDD UL Code Information 9.2.3.10A		–	
<b>&gt;&gt;&gt;UL Timeslot Information LCR</b>		0..<maxno OfTSLCR >		Applicable to 1.28Mcps TDD only	GLOBAL	reject
>>>>Time Slot LCR	M		9.2.3.12a		–	
>>>>Midamble Shift LCR	O		9.2.3.4C		–	
>>>>TFCI Presence	O		9.2.1.55		–	
>>>>UL Code Information LCR	O		TDD UL Code Information LCR 9.2.3.10B		–	
<b>&gt;DL CCTrCH Information</b>		0..<maxno ofCCTrCH s>			GLOBAL	reject
>>CCTrCH ID	M		9.2.3.2		–	
<b>&gt;&gt;DL DPCH Information</b>		1			YES	notify
>>>Repetition Period	O		9.2.3.7		–	
>>>Repetition Length	O		9.2.3.6		–	
>>>TDD DPCH Offset	O		9.2.3.8A		–	
<b>&gt;&gt;&gt;DL Timeslot Information</b>		0..<maxno OfTTS>		Applicable to 3.84Mcps TDD only	–	
>>>>Time Slot	M		9.2.1.56		–	
>>>>Midamble Shift And Burst Type	O		9.2.3.4		–	
>>>>TFCI Presence	O		9.2.1.55		–	
>>>>DL Code Information	O		TDD DL Code Information 9.2.3.8C		–	
<b>&gt;&gt;&gt;DL Timeslot Information LCR</b>		0..<maxno OfTSLCR >		Applicable to 1.28Mcps TDD only	GLOBAL	reject
>>>>Time Slot LCR	M		9.2.3.12a		–	
>>>>Midamble Shift LCR	O		9.2.3.4C		–	
>>>>TFCI Presence	O		9.2.1.55		–	

>>>>DL Code Information LCR	O		TDD DL Code Information LCR 9.2.3.8D		–	
>HS-PDSCH Timeslot Specific Information		0..<maxno ofDLts>		Applicable to 3.84Mcps TDD only.	GLOBAL	reject
>>Time Slot	M		9.2.1.56		–	
>>Midamble Shift And Burst Type	M		9.2.3.4		–	
>HS-PDSCH Timeslot Specific Information LCR		0..<maxno ofDLtsLCR >		Applicable to 1.28Mcps TDD only	GLOBAL	reject
>>Time Slot LCR	M		9.2.3.12a		–	
>>Midamble Shift LCR	M		9.2.3.4C		–	

Range bound	Explanation
<i>maxnoofCCTrCHs</i>	Maximum number of CCTrCHs for a UE.
<i>maxnoofTS</i>	Maximum number of Timeslots for a UE for 3.84Mcps TDD.
<i>maxnoofTSLCR</i>	Maximum number of Timeslots for a UE for 1.28Mcps TDD.
<i>maxnoofDLts</i>	Maximum number of downlink time slots per Radio Link for 3.84Mcps TDD.
<i>maxnoofDLtsLCR</i>	Maximum number of Downlink time slots per Radio Link for 1.28Mcps TDD.

### 9.1.22 PHYSICAL CHANNEL RECONFIGURATION COMMAND

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Type	M		9.2.1.40		YES	reject
Transaction ID	M		9.2.1.59		–	
CFN	M		9.2.1.9		YES	ignore
Criticality Diagnostics	O		9.2.1.13		YES	ignore

### 9.1.23 PHYSICAL CHANNEL RECONFIGURATION FAILURE

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Type	M		9.2.1.40		YES	reject
Transaction ID	M		9.2.1.59		–	
Cause	M		9.2.1.5		YES	ignore
Criticality Diagnostics	O		9.2.1.13		YES	ignore

## 9.1.24 UPLINK SIGNALLING TRANSFER INDICATION

### 9.1.24.1 FDD Message

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Type	M		9.2.1.40		YES	ignore
Transaction ID	M		9.2.1.59		–	
UC-ID	M		9.2.1.71		YES	ignore
SAI	M		9.2.1.52		YES	ignore
Cell GAI	O		9.2.1.5A		YES	ignore
C-RNTI	M		9.2.1.14		YES	ignore
S-RNTI	M		9.2.1.54		YES	ignore
D-RNTI	O		9.2.1.24		YES	ignore
Propagation Delay	M		9.2.2.33		YES	ignore
STTD Support Indicator	M		9.2.2.45		YES	ignore
Closed Loop Mode1 Support Indicator	M		9.2.2.2		YES	ignore
Closed Loop Mode2 Support Indicator	M		9.2.2.3		YES	ignore
L3 Information	M		9.2.1.32		YES	ignore
CN PS Domain Identifier	O		9.2.1.12		YES	ignore
CN CS Domain Identifier	O		9.2.1.11		YES	ignore
URA Information	O		9.2.1.70B		YES	ignore
Cell GA Additional Shapes	O		9.2.1.5B		YES	ignore
DPC Mode Change Support Indicator	O		9.2.2.56		YES	ignore
Common Transport Channel Resources Initialisation Not Required	O		9.2.1.12F		YES	Ignore
Cell Capability Container FDD	O		9.2.2.D		YES	ignore
SNA Information	O		9.2.1.52Ca		YES	ignore
Cell Portion ID	O		9.2.2.E		YES	ignore

## 9.1.24.2 TDD Message

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Type	M		9.2.1.40		YES	ignore
Transaction ID	M		9.2.1.59		–	
UC-ID	M		9.2.1.71		YES	ignore
SAI	M		9.2.1.52		YES	ignore
Cell GAI	O		9.2.1.5A		YES	Ignore
C-RNTI	M		9.2.1.14		YES	ignore
S-RNTI	M		9.2.1.54		YES	ignore
D-RNTI	O		9.2.1.24		YES	ignore
Rx Timing Deviation	M		9.2.3.7A		YES	ignore
L3 Information	M		9.2.1.32		YES	ignore
CN PS Domain Identifier	O		9.2.1.12		YES	ignore
CN CS Domain Identifier	O		9.2.1.11		YES	ignore
URA Information	O		9.2.1.70B		YES	ignore
Cell GA Additional Shapes	O		9.2.1.5B		YES	ignore
Common Transport Channel Resources Initialisation Not Required	O		9.2.1.12F		YES	ignore
Cell Capability Container TDD	O		9.2.3.1a	Applicable to 3.84Mcps TDD only	YES	ignore
Cell Capability Container TDD LCR	O		9.2.3.1b	Applicable to 1.28Mcps TDD only	YES	ignore
SNA Information	O		9.2.1.52Ca		YES	ignore

## 9.1.24A GERAN UPLINK SIGNALLING TRANSFER INDICATION

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.2.1.40		YES	ignore
Transaction ID	M		9.2.1.59		–	
UC-ID	M		9.2.1.71	UC-ID may be a GERAN cell identifier.	YES	ignore
SAI	M		9.2.1.52		YES	ignore
S-RNTI	M		9.2.1.54		YES	ignore
D-RNTI	O		9.2.1.24		YES	ignore
L3 Information	M		9.2.1.32		YES	ignore
CN PS Domain Identifier	O		9.2.1.12		YES	ignore
CN CS Domain Identifier	O		9.2.1.11		YES	ignore
URA Information	O		9.2.1.70B	URA information may be GRA information	YES	ignore

### 9.1.25 DOWNLINK SIGNALLING TRANSFER REQUEST

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Type	M		9.2.1.40		YES	ignore
Transaction ID	M		9.2.1.59		–	
C-ID	M		9.2.1.6	May be a GERAN cell identifier	YES	ignore
D-RNTI	M		9.2.1.24		YES	ignore
L3 Information	M		9.2.1.32		YES	ignore
D-RNTI Release Indication	M		9.2.1.25		YES	ignore

### 9.1.26 RELOCATION COMMIT

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Type	M		9.2.1.40		YES	ignore
Transaction ID	M		9.2.1.59		–	
D-RNTI	O		9.2.1.24		YES	ignore
RANAP Relocation Information	O		9.2.1.47		YES	ignore

### 9.1.27 PAGING REQUEST

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Type	M		9.2.1.40		YES	ignore
Transaction ID	M		9.2.1.59		–	
CHOICE <i>Paging Area</i>	M				YES	ignore
> <i>URA</i>					–	
>>URA-ID	M		9.2.1.70	May be a GRA-ID.	–	
> <i>Cell</i>				UTRAN only	–	
>>C-ID	M		9.2.1.6		–	
SRNC-ID	M		RNC-ID 9.2.1.50	May be a BSC-ID.	YES	ignore
S-RNTI	M		9.2.1.53		YES	ignore
IMSI	M		9.2.1.31		YES	ignore
DRX Cycle Length Coefficient	M		9.2.1.26		YES	ignore
<b>CN Originated Page to Connected Mode UE</b>		0..1			YES	ignore
>Paging Cause	M		9.2.1.41E		–	
>CN Domain Type	M		9.2.1.11A		–	
>Paging Record Type	M		9.2.1.41F		–	



## 9.1.28 DEDICATED MEASUREMENT INITIATION REQUEST

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Type	M		9.2.1.40		YES	reject
Transaction ID	M		9.2.1.59		–	
Measurement ID	M		9.2.1.37		YES	reject
CHOICE <i>Dedicated Measurement Object Type</i>	M				YES	reject
>RL					–	
>>RL Information		1..<maxn oofRLs>			EACH	reject
>>>RL-ID	M		9.2.1.49		–	
>>>DPCH ID	O		9.2.3.3	TDD only	–	
>>>HS-SICH Information		0..<maxn oofHSSI CHs>		TDD only	GLOBAL	reject
>>>>HS-SICH ID	M		9.2.3.3ad		–	
>RLS				FDD only	–	
>>RL Set Information		1..<maxn oofRLSets>			EACH	reject
>>>RL-Set-ID	M		9.2.2.35		–	
>ALL RL			NULL		–	
>ALL RLS			NULL	FDD only	–	
Dedicated Measurement Type	M		9.2.1.18		YES	reject
Measurement Filter Coefficient	O		9.2.1.36		YES	reject
Report Characteristics	M		9.2.1.48		YES	reject
CFN reporting indicator	M		FN reporting indicator 9.2.1.28A		YES	reject
CFN	O		9.2.1.9		YES	reject
Partial Reporting Indicator	O		9.2.1.41Fa		YES	ignore
Measurement Recovery Behavior	O		9.2.1.38A		YES	ignore

Range bound	Explanation
<i>maxnoofRLs</i>	Maximum number of individual RLs a measurement can be started on.
<i>maxnoofRLSets</i>	Maximum number of individual RL Sets a measurement can be started on.

## 9.1.29 DEDICATED MEASUREMENT INITIATION RESPONSE

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Type	M		9.2.1.40		YES	reject
Transaction ID	M		9.2.1.59		–	
Measurement ID	M		9.2.1.37		YES	ignore
CHOICE <i>Dedicated Measurement Object Type</i>	O			Dedicated Measurement Object Type the measurement was initiated with	YES	ignore
>RL or ALL RL				See Note 1	–	
>>RL Information		1..<maxno ofRLs>			EACH	ignore
>>>RL ID	M		9.2.1.49		–	
>>>DPCH ID	O		9.2.3.3	TDD only	–	
>>>Dedicated Measurement Value	M		9.2.1.19		–	
>>>CFN	O		9.2.1.9	Dedicated Measurement Time Reference	–	
>>>HS-SICH ID	O		9.2.3.3ad	TDD only	YES	reject
>RLS or ALL RLS				FDD only See Note 2	–	
>>RL Set Information		1..<maxno ofRLSets>			EACH	ignore
>>>RL Set ID	M		9.2.2.35		–	
>>>Dedicated Measurement Value	M		9.2.1.19		–	
>>>CFN	O		9.2.1.9	Dedicated Measurement Time Reference	–	
Criticality Diagnostics	O		9.2.1.13		YES	Ignore
Measurement Recovery Support Indicator	O		9.2.1.38C		YES	ignore

Range bound	Explanation
<i>maxnoofRLs</i>	Maximum number of individual RLs the measurement can be started on.
<i>maxnoofRLSets</i>	Maximum number of individual RL Sets the measurement can be started on.

Note 1: This is a simplified representation of the ASN.1: there are two different choice tags "RL" and "ALL RL" in the ASN.1, each having exactly the same structure.

Note 2: This is a simplified representation of the ASN.1: there are two different choice tags "RLS" and "ALL RLS" in the ASN.1, each having exactly the same structure.

## 9.1.30 DEDICATED MEASUREMENT INITIATION FAILURE

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Type	M		9.2.1.40		YES	reject
Transaction ID	M		9.2.1.59		–	
Measurement ID	M		9.2.1.37		YES	ignore
Cause	M		9.2.1.5		YES	ignore
Criticality Diagnostics	O		9.2.1.13		YES	ignore
CHOICE <i>Dedicated Measurement Object Type</i>	O			Dedicated Measurement Object Type the measurement was initiated with	YES	ignore
>RL or ALL RL					–	
>>Unsuccessful RL Information		1..<maxno ofRLs>			EACH	ignore
>>>RL ID	M		9.2.1.49		–	
>>>Individual Cause	O		Cause 9.2.1.5		–	
>>Successful RL Information		0..<maxno ofRLs-1>			EACH	ignore
>>>RL ID	M		9.2.1.49		–	
>>>DPCH ID	O		9.2.3.3	TDD only	–	
>>>Dedicated Measurement Value	M		9.2.1.19		–	
>>>CFN	O		9.2.1.9	Dedicated Measurement Time Reference	–	
>>>HS-SICH ID	O		9.2.3.3ad	TDD only	YES	reject
>RLS or ALL RLS				FDD only	–	
>>Unsuccessful RL Set Information		1..<maxno ofRLSets>			EACH	ignore
>>>RL Set ID	M		9.2.2.35		–	
>>>Individual Cause	O		Cause 9.2.1.5		–	
>>Successful RL Set Information		0..<maxno ofRLSets-1>			EACH	ignore
>>>RL Set ID	M		9.2.2.35		–	
>>>Dedicated Measurement Value	M		9.2.1.19		–	
>>>CFN	O		9.2.1.9	Dedicated Measurement Time Reference	–	

Range bound	Explanation
<i>maxnoofRLs</i>	Maximum number of individual RLs the measurement can be started on.
<i>maxnoofRLSets</i>	Maximum number of individual RL Sets the measurement can be started on.

## 9.1.31 DEDICATED MEASUREMENT REPORT

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Type	M		9.2.1.40		YES	ignore
Transaction ID	M		9.2.1.59		–	
Measurement ID	M		9.2.1.37		YES	ignore
CHOICE <i>Dedicated Measurement Object Type</i>	M			Dedicated Measurement Object Type the measurement was initiated with	YES	ignore
>RL or ALL RL				See Note 1	–	
>>RL Information		1..<maxnoofRLs>			EACH	ignore
>>>RL-ID	M		9.2.1.49		–	
>>>DPCH ID	O		9.2.3.3	TDD only	–	
>>>Dedicated Measurement Value Information	M		9.2.1.19A		–	
>>>HS-SICH ID	O		9.2.3.3ad	TDD only	YES	ignore
>RLS or ALL RLS				FDD only See Note 2	–	
>>RL Set Information		1..<maxnoofRLSets>			EACH	ignore
>>>RL Set ID	M		9.2.2.35		–	
>>>Dedicated Measurement Value Information	M		9.2.1.19A		–	
Measurement Recovery Reporting Indicator	O		9.2.1.38B		YES	ignore

Range bound	Explanation
<i>maxnoofRLs</i>	Maximum number of individual RLs the measurement can be started on.
<i>maxnoofRLSets</i>	Maximum number of individual RL Sets the measurement can be started on.

Note 1: This is a simplified representation of the ASN.1: there are two different choice tags "RL" and "ALL RL" in the ASN.1, each having exactly the same structure.

Note 2: This is a simplified representation of the ASN.1: there are two different choice tags "RLS" and "ALL RLS" in the ASN.1, each having exactly the same structure.

## 9.1.32 DEDICATED MEASUREMENT TERMINATION REQUEST

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Type	M		9.2.1.40		YES	ignore
Transaction ID	M		9.2.1.59		–	
Measurement ID	M		9.2.1.37		YES	ignore

### 9.1.33 DEDICATED MEASUREMENT FAILURE INDICATION

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Type	M		9.2.1.40		YES	ignore
Transaction ID	M		9.2.1.59		–	
Measurement ID	M		9.2.1.37		YES	ignore
Cause	M		9.2.1.5		YES	ignore
CHOICE <i>Dedicated Measurement Object Type</i>	O			Dedicated Measurement Object Type the measurement was initiated with	YES	ignore
>RL or ALL RL					–	
>>Unsuccessful RL Information		1..<maxnoof RLS>			EACH	ignore
>>>RL ID	M		9.2.1.49		–	
>>>Individual Cause	O		Cause 9.2.1.5		–	
>RLS or ALL RLS				FDD only	–	
>>Unsuccessful RL Set Information		1..<maxnoof RL Sets>			EACH	ignore
>>>RL Set ID	M		9.2.2.35		–	
>>>Individual Cause	O		Cause 9.2.1.5		–	

Range bound	Explanation
<i>maxnoofRLs</i>	Maximum number of individual RLS the measurement can be started on.
<i>maxnoofRLSets</i>	Maximum number of individual RL Sets the measurement can be started on.

### 9.1.34 COMMON TRANSPORT CHANNEL RESOURCES RELEASE REQUEST

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Type	M		9.2.1.40		YES	ignore
Transaction ID	M		9.2.1.59		–	
D-RNTI	M		9.2.1.24		YES	ignore

### 9.1.35 COMMON TRANSPORT CHANNEL RESOURCES REQUEST

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Type	M		9.2.1.40		YES	reject
Transaction ID	M		9.2.1.59		–	
D-RNTI	M		9.2.1.24		YES	reject
C-ID	O		9.2.1.6		YES	reject
Transport Bearer Request Indicator	M		9.2.1.61	Request a new transport bearer or to use an existing bearer for the user plane.	YES	reject
Transport Bearer ID	M		9.2.1.60	Indicates the lur transport bearer to be used for the user plane.	YES	reject
Permanent NAS UE Identity	O		9.2.1.73		YES	ignore
Binding ID	O		9.2.1.3	Shall be ignored if bearer establishment with ALCAP.	YES	ignore
Transport Layer Address	O		9.2.1.62	Shall be ignored if bearer establishment with ALCAP.	YES	ignore

### 9.1.36 COMMON TRANSPORT CHANNEL RESOURCES RESPONSE

#### 9.1.36.1 FDD Message

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Type	M		9.2.1.40		YES	reject
Transaction ID	M		9.2.1.59		–	
S-RNTI	M		9.2.1.53		YES	ignore
C-RNTI	O		9.2.1.14		YES	ignore
<b>FACH Info for UE Selected S-CCPCH</b>		1			YES	ignore
>FACH Flow Control Information	M		9.2.1.26C		YES	ignore
Transport Layer Address	O		9.2.1.62		YES	ignore
Binding Identity	O		9.2.1.3		YES	ignore
Criticality Diagnostics	O		9.2.1.13		YES	ignore
C-ID	M		9.2.1.6		YES	ignore

## 9.1.36.2 TDD Message

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Type	M		9.2.1.40		YES	reject
Transaction ID	M		9.2.1.59		–	
S-RNTI	M		9.2.1.53		YES	ignore
C-RNTI	O		9.2.1.14		YES	ignore
<b>FACH Info for UE Selected S-CCPCHs</b>		1			YES	ignore
>FACH Flow Control Information	M		9.2.1.26C		YES	ignore
Transport Layer Address	O		9.2.1.62		YES	ignore
Binding Identity	O		9.2.1.3		YES	ignore
Criticality Diagnostics	O		9.2.1.13		YES	ignore
C-ID	M		9.2.1.6		YES	ignore

## 9.1.37 COMMON TRANSPORT CHANNEL RESOURCES FAILURE

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Type	M		9.2.1.40		YES	reject
Transaction ID	M		9.2.1.59		–	
S-RNTI	M		9.2.1.53		YES	ignore
Cause	M		9.2.1.5		YES	ignore
Criticality Diagnostics	O		9.2.1.13		YES	ignore

## 9.1.38 COMPRESSED MODE COMMAND [FDD]

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Type	M		9.2.1.40		YES	ignore
Transaction ID	M		9.2.1.59		–	
Active Pattern Sequence Information	M		9.2.2.A		YES	ignore

## 9.1.39 ERROR INDICATION

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Type	M		9.2.1.40		YES	ignore
Transaction ID	M		9.2.1.59		–	
Cause	O		9.2.1.5		YES	ignore
Criticality Diagnostics	O		9.2.1.13		YES	ignore
S-RNTI	O		9.2.1.53		YES	ignore
D-RNTI	O		9.2.1.24		YES	ignore

## 9.1.40 DL POWER TIMESLOT CONTROL REQUEST [TDD]

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Type	M		9.2.1.40		YES	ignore
Transaction ID	M		9.2.1.59		–	
DL Time Slot ISCP Info	O		9.2.3.2D	Mandatory for 3.84Mcps TDD, not applicable to 1.28Mcps TDD	YES	ignore
DL Time Slot ISCP Info LCR	O		9.2.3.2F	Mandatory for 1.28Mcps TDD, not applicable to 3.84Mcps TDD	YES	ignore
Primary CCPCH RSCP	O		9.2.3.5		YES	ignore
Primary CCPCH RSCP Delta	O		9.2.3.5a		YES	ignore

## 9.1.41 RADIO LINK PREEMPTION REQUIRED INDICATION

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Type	M		9.2.1.40		YES	ignore
Transaction ID	M		9.2.1.59		–	
<b>RL Information</b>		<i>0..&lt;maxno ofRLs&gt;</i>			EACH	ignore
>RL ID	M		9.2.1.49		–	
<a href="#">&gt; E-DCH MAC-d Flow Specific Information</a>		<a href="#">0..&lt;maxno ofMACdFlows&gt;</a>			<a href="#">EACH</a>	<a href="#">ignore</a>
<a href="#">&gt;&gt; E-DCH MAC-d Flow ID</a>	<a href="#">M</a>		<a href="#">9.2.1.30OE</a>		<a href="#">=</a>	
<b>HS-DSCH MAC-d Flow Specific Information</b>		<i>0..&lt;maxno ofMACdFlows&gt;</i>			EACH	ignore
>HS-DSCH MAC-d Flow ID	M		9.2.1.30O		–	

Range bound	Explanation
<i>maxnoofRLs</i>	Maximum number of radio links for one UE
<i>maxnoofMACdFlows</i>	Maximum number of HS-DSCH MAC-d flows



## 9.1.42 RADIO LINK CONGESTION INDICATION

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Type	M		9.2.1.40		YES	ignore
Transaction ID	M		9.2.1.59		–	
Congestion Cause	O		9.2.1.79		YES	ignore
<b>RL Information</b>		<i>1..&lt;maxno ofRLs&gt;</i>			EACH	ignore
>RL ID	M		9.2.1.49		–	
<b>&gt;DCH Rate Information</b>		<i>1..&lt;maxno ofDCHs&gt;</i>			EACH	ignore
>>DCH ID	M		9.2.1.16		–	
>>Allowed Rate Information	O		9.2.1.2A		–	
<a href="#">&gt; E-DCH MAC-d Flow Specific Information</a>		<a href="#">0..&lt;maxno ofMACdFI qws&gt;</a>			<a href="#">EACH</a>	<a href="#">ignore</a>
<a href="#">&gt;&gt; E-DCH MAC-d Flow ID</a>	<a href="#">M</a>		<a href="#">9.2.1.30OE</a>		<a href="#">=</a>	

Range bound	Explanation
<i>maxnoofRLs</i>	Maximum number of Radio Links for one UE
<i>maxnoofDCHs</i>	Maximum number of DCHs for one UE.

## 9.1.43 COMMON MEASUREMENT INITIATION REQUEST

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Type	M		9.2.1.40		YES	reject
Transaction ID	M		9.2.1.59		–	
Measurement ID	M		9.2.1.37		YES	reject
CHOICE <i>Common Measurement Object Type</i>	M				YES	reject
>Cell					–	
>>Reference Cell Identifier	M		UTRAN Cell Identifier 9.2.1.71	May be a GERAN Cell Identifier	–	
>>Time Slot	O		9.2.1.56	3.84Mcps TDD only	–	
>>Time Slot LCR	O		9.2.3.12a	1.28Mcps TDD only	–	
>>>Neighbouring Cell Measurement Information		<i>0..&lt;maxnof MeasNCells &gt;</i>		UTRAN only	–	
>>>>CHOICE <i>Neighbouring Cell Measurement Information</i>					–	
>>>>>Neighbouring FDD Cell Measurement Information				FDD only	–	
>>>>>>Neighbouring FDD Cell Measurement Information	M		9.2.1.41G		–	
>>>>>>>Neighbouring TDD Cell Measurement Information				3.84Mcps TDD only	–	
>>>>>>>>Neighbouring TDD Cell Measurement Information	M		9.2.1.41H		–	
>>>>>>>>>Additional Neighbouring Cell Measurement Information					–	
>>>>>>>>>>Neighbouring TDD Cell Measurement InformationLCR				1.28Mcps TDD only	–	
>>>>>>>>>>>Neighbouring TDD Cell Measurement InformationLCR	M		9.2.1.41Dd		YES	reject
Common Measurement Type	M		9.2.1.12C		YES	reject
Measurement Filter Coefficient	O		9.2.1.41	UTRAN only	YES	reject
Report Characteristics	M		9.2.1.48		YES	reject
SFN reporting indicator	M		FN reporting		YES	reject

			indicator 9.2.1.28A			
SFN	O		9.2.1.52A	UTRAN only	YES	reject
Common Measurement Accuracy	O		9.2.1.12A	UTRAN only	YES	reject
Measurement Recovery Behavior	O		9.2.1.38A	UTRAN only	YES	ignore

Range bound	Explanation
<i>maxnoofMeasNCell</i>	Maximum number of neighbouring cells on which measurements can be performed.

#### 9.1.44 COMMON MEASUREMENT INITIATION RESPONSE

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Type	M		9.2.1.40		YES	reject
Transaction ID	M		9.2.1.59		–	
Measurement ID	M		9.2.1.37		YES	ignore
CHOICE <i>Common Measurement Object Type</i>	O			Common Measurement Object Type that the measurement was initiated with.	YES	ignore
<i>&gt;Cell</i>					–	
<i>&gt;&gt;Common Measurement value</i>	M		9.2.1.12D		–	
SFN	O		9.2.1.52A	Common Measurement Time Reference, UTRAN only.	YES	ignore
Criticality Diagnostics	O		9.2.1.13		YES	ignore
Common Measurement Achieved Accuracy	O		Common Measurement Accuracy 9.2.1.12A	UTRAN only	YES	ignore
Measurement Recovery Support Indicator	O		9.2.1.38C	UTRAN only	YES	ignore

#### 9.1.45 COMMON MEASUREMENT INITIATION FAILURE

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Type	M		9.2.1.40		YES	reject
Transaction ID	M		9.2.1.59		–	
Measurement ID	M		9.2.1.37		YES	ignore
Cause	M		9.2.1.5		YES	ignore
Criticality Diagnostics	O		9.2.1.13		YES	ignore

## 9.1.46 COMMON MEASUREMENT REPORT

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Type	M		9.2.1.40		YES	ignore
Transaction ID	M		9.2.1.59		–	
Measurement ID	M		9.2.1.37		YES	ignore
CHOICE <i>Common Measurement Object Type</i>	M			Common Measurement Object Type that the measurement was initiated with.	YES	ignore
>Cell					–	
>>Common Measurement Value Information	M		9.2.1.12E		–	
SFN	O		9.2.1.52A	Common Measurement Time Reference, UTRAN only.	YES	ignore
Measurement Recovery Reporting Indicator	O		9.2.1.38B	UTRAN only	YES	ignore

## 9.1.47 COMMON MEASUREMENT TERMINATION REQUEST

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Type	M		9.2.1.40		YES	ignore
Transaction ID	M		9.2.1.59		–	
Measurement ID	M		9.2.1.37		YES	ignore

## 9.1.48 COMMON MEASUREMENT FAILURE INDICATION

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Type	M		9.2.1.40		YES	ignore
Transaction ID	M		9.2.1.59		–	
Measurement ID	M		9.2.1.37		YES	ignore
Cause	M		9.2.1.5		YES	ignore

### 9.1.49 INFORMATION EXCHANGE INITIATION REQUEST

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Type	M		9.2.1.40		YES	reject
Transaction ID	M		9.2.1.59		-	
Information Exchange ID	M		9.2.1.31A		YES	reject
CHOICE <i>Information Exchange Object Type</i>	M				YES	reject
>Cell					-	
>>C-ID	M		9.2.1.6	May be a GERAN cell identifier	-	
>Additional Information Exchange Object Types						
>>GSM Cell						
>>>CGI	M		9.2.1.5D		-	
Information Type	M		9.2.1.31E		YES	reject
Information Report Characteristics	M		9.2.1.31C		YES	reject

### 9.1.50 INFORMATION EXCHANGE INITIATION RESPONSE

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Type	M		9.2.1.40		YES	reject
Transaction ID	M		9.2.1.59		-	
Information Exchange ID	M		9.2.1.31A		YES	ignore
CHOICE <i>Information Exchange Object Type</i>	O				YES	ignore
>Cell					-	
>>Requested Data Value	M		9.2.1.48A		-	
Criticality Diagnostics	O		9.2.1.13		YES	ignore

### 9.1.51 INFORMATION EXCHANGE INITIATION FAILURE

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Type	M		9.2.1.40		YES	reject
Transaction ID	M		9.2.1.59		-	
Information Exchange ID	M		9.2.1.31A		YES	ignore
Cause	M		9.2.1.5		YES	ignore
Criticality Diagnostics	O		9.2.1.13		YES	ignore

### 9.1.52 INFORMATION REPORT

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Type	M		9.2.1.40		YES	ignore
Transaction ID	M		9.2.1.59		–	
Information Exchange ID	M		9.2.1.31A		YES	ignore
CHOICE <i>Information Exchange Object Type</i> > <i>Cell</i>	M				YES	ignore
>>Requested Data Value Information	M		9.2.1.48B		–	

### 9.1.53 INFORMATION EXCHANGE TERMINATION REQUEST

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Type	M		9.2.1.40		YES	ignore
Transaction ID	M		9.2.1.59		–	
Information Exchange ID	M		9.2.1.31A		YES	ignore

### 9.1.54 INFORMATION EXCHANGE FAILURE INDICATION

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Type	M		9.2.1.40		YES	ignore
Transaction ID	M		9.2.1.59		–	
Information Exchange ID	M		9.2.1.31A		YES	ignore
Cause	M		9.2.1.5		YES	ignore

### 9.1.55 RESET REQUEST

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Type	M		9.2.1.40		YES	reject
Transaction ID	M		9.2.1.59		–	

RNC-ID	M		9.2.1.50	Identity of the sending RNC	YES	reject
CHOICE <i>Reset Indicator</i>	M				YES	reject
> <i>Context</i>					–	
>> <b>Context Information</b>		1..<maxResetContext>			EACH	reject
>>>CHOICE <i>Context Type</i>	M				–	
>>>> <i>SRNTI</i>					–	
>>>>>S-RNTI	M		9.2.1.53		–	
>>>>>DRNTI					–	
>>>>>D-RNTI	M		9.2.1.24		–	
> <i>All Contexts</i>			NULL		–	
> <i>Context Group</i>					–	
>> <b>Context Group Information</b>		1..<maxResetContextGroups>			EACH	reject
>>>S-RNTI Group	M		9.2.1.53a		–	

Range bound	Explanation
<i>maxResetContext</i>	Maximum number of contexts that can be reset by one RESET message.
<i>maxResetContextGroups</i>	Maximum number of context groups that can be reset by one RESET message.

## 9.1.56 RESET RESPONSE

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Type	M		9.2.1.40		YES	reject
Transaction ID	M		9.2.1.59		–	
RNC-ID	M		9.2.1.50	Identity of the sending RNC	YES	ignore
Criticality Diagnostics	O		9.2.1.13		YES	ignore

## 9.1.57 RADIO LINK ACTIVATION COMMAND

### 9.1.57.1 FDD Message

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Type	M		9.2.1.46		YES	ignore
Transaction ID	M		9.2.1.62		–	
<b>Delayed activation Information</b>		1..<maxnoofRLs>			EACH	ignore
>RL ID	M		9.2.1.49		-	
>Delayed Activation Update	M		9.2.1.19Ab		-	

## 9.1.57.2 TDD Message

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Type	M		9.2.1.46		YES	ignore
Transaction ID	M		9.2.1.62		-	
<b>Delayed activation Information</b>		<i>1..&lt;maxnoofRLs&gt;</i>			EACH	ignore
>RL ID	M		9.2.1.49		-	
>Delayed Activation Update	M		9.2.1.19Ab		-	

## 9.1.58 RADIO LINK PARAMETER UPDATE INDICATION

## 9.1.58.1 FDD Message

IE/Group name	Presence	Range	IE Type and Reference	Semantic Description	Criticality	Assigned Criticality
Message type	M		9.2.1.40		YES	ignore
Transaction ID	M		9.2.1.59		-	
HS-DSCH FDD Update Information	O		9.2.2.19c		YES	ignore
<b>RL Information</b>		<i>0..&lt;maxnoofRLs&gt;</i>			EACH	ignore
>RL Id	M		9.2.1.49		-	
>Phase Reference Update Indicator	O		9.2.2.27B		-	
<a href="#">E-DCH FDD Update Information</a>	<a href="#">O</a>		<a href="#">9.2.2.19e</a>		<a href="#">YES</a>	<a href="#">ignore</a>

## 9.1.58.2 TDD Message

IE/Group name	Presence	Range	IE Type and Reference	Semantic Description	Criticality	Assigned Criticality
Message type	M		9.2.1.40		YES	ignore
Transaction ID	M		9.2.1.59		-	
HS-DSCH TDD Update Information	O		9.2.3.3ac		YES	ignore



## 9.1.59 UE MEASUREMENT INITIATION REQUEST [TDD]

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Type	M		9.2.1.40		YES	reject
Transaction ID	M		9.2.1.59		–	
Allowed Queing Time	O		9.2.1.2		YES	reject
Measurement ID	M		9.2.1.37		YES	reject
UE Measurement Type	M		9.2.3.13Fh		YES	reject
UE Measurement Timeslot information HCR	O		9.2.3.13Fe	3.84 Mcps TDD only	YES	reject
UE Measurement Timeslot information LCR	O		9.2.3.13Ff	1.28 Mcps TDD only	YES	reject
Measurement Filter Coefficient	O		9.2.1.36		YES	reject
UE Measurement Report Characteristics	M		9.2.3.13Fc		YES	reject
UE Measurement Parameter Modification Allowed	O		9.2.3.13Fb		YES	reject

## 9.1.60 UE MEASUREMENT INITIATION RESPONSE [TDD]

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Type	M		9.2.1.40		YES	reject
Transaction ID	M		9.2.1.59		–	
Measurement ID	M		9.2.1.37		YES	ignore
Measurement Filter Coefficient	O		9.2.1.36		YES	reject
UE Measurement Report Characteristics	O		9.2.3.13Fc		YES	reject
Criticality Diagnostics	O		9.2.1.13		YES	ignore

## 9.1.61 UE MEASUREMENT INITIATION FAILURE [TDD]

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Type	M		9.2.1.40		YES	reject
Transaction ID	M		9.2.1.59		–	
Measurement ID	M		9.2.1.37		YES	ignore
Cause	M		9.2.1.5		YES	ignore
Criticality Diagnostics	O		9.2.1.13		YES	ignore

## 9.1.62 UE MEASUREMENT REPORT [TDD]

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Type	M		9.2.1.40		YES	ignore
Transaction ID	M		9.2.1.59		–	
Measurement ID	M		9.2.1.37		YES	ignore
UE Measurement Value Information	M		9.2.3.13Fj		YES	ignore

## 9.1.63 UE MEASUREMENT TERMINATION REQUEST [TDD]

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Type	M		9.2.1.40		YES	ignore
Transaction ID	M		9.2.1.59		–	
Measurement ID	M		9.2.1.37		YES	ignore

## 9.1.64 UE MEASUREMENT FAILURE INDICATION [TDD]

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Type	M		9.2.1.40		YES	ignore
Transaction ID	M		9.2.1.59		–	
Measurement ID	M		9.2.1.37		YES	ignore
Cause	M		9.2.1.5		YES	ignore

## 9.1.65 IUR INVOKE TRACE

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Type	M		9.2.1.40		YES	ignore
Transaction ID	M		9.2.1.59		–	
D-RNTI	O		9.2.1.24		YES	ignore
Trace Reference	M		9.2.1.58c		YES	ignore
UE Identity	M		9.2.1.66A		YES	ignore
Trace Recording Session Reference	M		9.2.1.58b		YES	ignore
<b>List Of Interfaces To Trace</b>		<i>0..maxnoofInterfaces</i>			EACH	ignore
>Interface	M		ENUMERATED (Iub, Iur,...)			
Trace Depth	M		9.2.1.58a		YES	ignore

Range bound	Explanation
<i>maxnoofInterfaces</i>	Maximum of Interfaces to be traced.

## 9.1.66 IUR DEACTIVATE TRACE

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Type	M		9.2.1.40		YES	ignore
Transaction ID	M		9.2.1.59		–	
D-RNTI	O		9.2.1.24		YES	ignore
Trace Reference	M		9.2.1.58c		YES	ignore

## 9.2 Information Element Functional Definition and Contents

### 9.2.0 General

Subclause 9.2 presents the RNSAP IE definitions in tabular format. The corresponding ASN.1 definition is presented in subclause 9.3. In case there is a contradiction between the tabular format in subclause 9.2 and the ASN.1 definition, the ASN.1 shall take precedence, except for the definition of conditions for the presence of conditional elements, in which the tabular format shall take precedence.

When specifying information elements which are to be represented by bitstrings, if not otherwise specifically stated in the semantics description of the concerned IE or elsewhere, the following principle applies with regards to the ordering of bits:

- The first bit (leftmost bit) contains the most significant bit (MSB);
- The last bit (rightmost bit) contains the least significant bit (LSB);
- When importing bitstrings from other specifications, the first bit of the bitstring contains the first bit of the concerned information;

### 9.2.1 Common Parameters

This subclause contains parameters that are common to FDD and TDD.

#### 9.2.1.1 Allocation/Retention Priority

This parameter indicates the priority level in the allocation and retention of transport channel resources in DRNS. DRNS may use the Allocation/Retention priority information of the transport channels composing the RL to prioritise requests for RL Setup/addition and reconfiguration. In similar way, DRNS may use the allocation/Retention priority information of the transport channels composing the RL to prioritise which RL shall be set to failure, in case prioritisation is possible. See Annex A.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Priority Level	M		INTEGER(0..15)	This IE indicates the priority of the request. <b>Usage:</b> Value "0" means "Spare"; It shall be treated as a logical error if received. Values between 1 and 14 are ordered in decreasing order of priority, '1' being the highest and '14' the lowest. Value "15" means "No Priority".
Pre-emption Capability	M		ENUMERATED(shall not trigger pre-emption, may trigger pre-emption)	
Pre-emption Vulnerability	M		ENUMERATED(not pre-emptable, pre-emptable)	

### 9.2.1.2 Allowed Queuing Time

This parameter specifies the maximum queuing time that is allowed in the DRNS until the DRNS must start to execute the request.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Allowed Queuing Time			INTEGER(1..60)	Unit: Seconds

### 9.2.1.2A Allowed Rate Information

The *Allowed Rate Information* IE indicates the TFI corresponding to the highest allowed bit rate for the uplink and/or the downlink of a DCH. The SRNC is allowed to use any rate being lower than or equal to the rate corresponding to the indicated TFI.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Allowed UL Rate	O		INTEGER(1..maxTFcount)	"1": TFI 0, "2": TFI 1, "3": TFI 2, ...
Allowed DL Rate	O		INTEGER(1..maxTFcount)	"1": TFI 0, "2": TFI 1, "3": TFI 2, ...

### 9.2.1.2B Altitude and Direction

This IE contains a description of Altitude and Direction.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Direction of Altitude	M		ENUMERATED(Height, Depth)	
Altitude	M		INTEGER(0..2 <sup>15</sup> -1)	The relation between the value (N) and the altitude (a) in meters it describes is $N \leq a < N+1$ , except for $N=2^{15}-1$ for which the range is extended to include all greater values of (a).

### 9.2.1.2C Antenna Co-location Indicator

The Antenna Co-location Indicator indicates whether the antenna of the serving and neighbouring cells are approximately co-located.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Antenna Co-location Indicator			ENUMERATED(co-located,...)	

### 9.2.1.3 Binding ID

The Binding ID is the identifier of a user data stream.

In case of transport bearer establishment with ALCAP [3][35], this IE contains the identifier that is allocated at the DRNS and that is unique for each transport bearer under establishment to/from the DRNS.

If the Transport Layer Address contains an IP address [33], this IE contains the UDP port [34] intended to be used for the user plane transport.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Binding ID			OCTET STRING (1..4,...)	If the Binding ID includes an UDP port, the UDP port is included in octet 1 and 2. The first octet of the UDP port field shall be included in the first octet of the Binding ID.

### 9.2.1.4 BLER

This Block Error Rate defines the target radio interface Transport Block Error Rate of the transport channel . BLER is used by the DRNS to determine the needed SIR targets, for admission control and power management reasons.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
BLER			INTEGER(-63..0)	Step 0.1. (Range -6.3...0). It is the Log10 of the BLER

#### 9.2.1.4A Block STTD Indicator

Void.

#### 9.2.1.4B Burst Mode Parameters

The *Burst Mode Parameters* IE provides all the relevant information in order to able IPDL in the Burst mode.

IE/Group name	Presence	Range	IE Type and Reference	Semantics Description
Burst Start	M		INTEGER(0..15)	See [10] and [22]
Burst Length	M		INTEGER(10..25)	See [10] and [22]
Burst freq	M		INTEGER(1..16)	See [10] and [22]

### 9.2.1.5 Cause

The purpose of the cause information element is to indicate the reason for a particular event for the whole protocol.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
CHOICE Cause Group	M			
>Radio Network Layer				
>>Radio Network Layer Cause	M		ENUMERATED (Unknown C-ID, Cell not Available, Power Level not Supported, UL Scrambling Code Already in Use, DL Radio Resources not Available, UL Radio Resources not Available, Measurement not Supported For The Object, Combining Resources Not Available, Combining not Supported, Reconfiguration not Allowed, Requested Configuration not Supported, Synchronisation Failure, Requested Tx Diversity Mode not Supported, Measurement Temporarily not Available, Unspecified, Invalid CM Settings, Reconfiguration CFN not Elapsed, Number of DL Codes Not Supported, Dedicated Transport Channel Type not Supported, DL Shared Channel Type not Supported, UL Shared Channel Type not Supported, Common Transport Channel Type not Supported, UL Spreading Factor not Supported, DL Spreading Factor not Supported, CM not Supported, Transaction not Supported by Destination Node B, RL Already Activated/Allocated, .... Number of UL Codes Not Supported, Cell reserved for operator use, DPC Mode Change not Supported, Information temporarily not available, Information Provision not supported for the object, Power Balancing status not compatible, Delayed Activation not Supported, RL Timing Adjustment Not Supported, Unknown RNTI, Measurement Repetition Rate not Compatible with Current Measurements, UE not Capable to Implement Measurement)	
>Transport Layer				
>>Transport Layer Cause	M		ENUMERATED (Transport Resource Unavailable, Unspecified, ...)	
>Protocol				
>>Protocol Cause	M		ENUMERATED (Transfer Syntax Error, Abstract Syntax Error (Reject), Abstract Syntax Error (Ignore and Notify), Message not Compatible with Receiver State, Semantic Error, Unspecified, Abstract Syntax Error (Falsely Constructed Message),...)	

>Misc			
>>Miscellaneous Cause	M		ENUMERATED (Control Processing Overload, Hardware Failure, O&M Intervention, Not enough User Plane Processing Resources, Unspecified,...)

The meaning of the different cause values is described in the following table. In general, "not supported" cause values indicate that the concerned capability is missing. On the other hand, "not available" cause values indicate that the concerned capability is present, but insufficient resources were available to perform the requested action.

Radio Network Layer cause	Meaning
Cell not Available	The concerned cell is not available
Cell reserved for operator use	The concerned cell is reserved for operator use
Combining not Supported	The DRNS does not support the RL combining for the concerned cells
Combining Resources Not Available	The value of the received <i>Diversity Control Field</i> IE was set to "Must", but the DRNS cannot perform the requested combining
CM not Supported	The concerned cell(s) do not support Compressed Mode
Common Transport Channel Type not Supported	The concerned cell(s) do not support the RACH and/or FACH and/or CPCH Common Transport Channel Type
Dedicated Transport Channel Type not Supported	The concerned cell(s) do not support the Dedicated Transport Channel Type
Delayed Activation not Supported	The concerned cell(s) do not support delayed activation of RLs
DL Radio Resources not Available	The DRNS does not have sufficient DL radio resources available
DL SF not Supported	The concerned cell(s) do not support the requested DL SF
DL Shared Channel Type not Supported	The concerned cell(s) do not support the Downlink Shared Channel Type
DPC Mode Change not Supported	The concerned cells do not support the DPC mode changes
Information Provision not supported for the object	The RNS doesn't support provision of the requested information for the concerned object types
Information temporarily not available	The RNS can temporarily not provide the requested information
Invalid CM Settings	The concerned cell(s) consider the requested Compressed Mode settings invalid
Measurement not Supported For The Object	At least one of the concerned cell(s) does not support the requested measurement on the concerned object type
Measurement Repetition Rate not Compatible with Current Measurements	The requested parameters for a forwarded UE measurement are not compatible with the current measurement schedule in the SRNC.
Measurement Temporarily not Available	The DRNS can temporarily not provide the requested measurement value
Number of DL Codes not Supported	The concerned cell(s) do not support the requested number of DL codes
Number of UL Codes not Supported	The concerned cell(s) do not support the requested number of UL codes
Power Level not Supported	A DL power level was requested which the concerned cell(s) do not support
Power Balancing status not compatible	The power balancing status in the SRNC is not compatible with that of the DRNC.
RL Timing Adjustment not Supported	The concerned cell(s) do not support adjustments of the RL timing
Reconfiguration CFN not Elapsed	The requested action cannot be performed due to that a COMMIT message was received previously, but the concerned CFN has not yet elapsed
Reconfiguration not Allowed	The SRNC does currently not allow the requested reconfiguration
Requested Configuration not Supported	The concerned cell(s) do not support the requested configuration i.e. power levels, Transport Formats, physical channel parameters,.....
Requested Tx Diversity mode not	The concerned cell(s) do not support the requested transmit diversity

Supported	mode
RL Already Activated/ Allocated	The DRNS has already allocated an RL with the requested RL ID for this UE Context
Synchronisation Failure	Loss of UL Uu synchronisation
Transaction not Supported by Destination Node B	The requested action cannot be performed due to lack of support of the corresponding action in the destination Node B
UE not Capable to Implement Measurement	The UE is not capable to initiate/report a requested measurement due to its current state or capabilities.
UL Radio Resources not Available	The DRNS does not have sufficient UL radio resources available
UL Scrambling Code Already in Use	The concerned UL scrambling code is already in use for another UE
UL SF not Supported	The concerned cell(s) do not support the requested minimum UL SF
UL Shared Channel Type not Supported	The concerned cell(s) do not support the Uplink Shared Channel Type
Unknown C-ID	The DRNS is not aware of a cell with the provided C-ID
Unknown RNTI	The SRNC or DRNC is not aware of a UE indicated with the provided RNTI
Unspecified	Sent when none of the above cause values applies but still the cause is Radio Network Layer related

<b>Transport Network Layer cause</b>	<b>Meaning</b>
Transport resource unavailable	The required transport resources are not available
Unspecified	Sent when none of the above cause values applies but still the cause is Transport Network Layer related

<b>Protocol cause</b>	<b>Meaning</b>
Abstract Syntax Error (Reject)	The received message included an abstract syntax error and the concerned criticality indicated "reject" (see subclause 10.3)
Abstract Syntax Error (Ignore and Notify)	The received message included an abstract syntax error and the concerned criticality indicated "ignore and notify" (see subclause 10.3)
Abstract syntax error (falsely constructed message)	The received message contained IEs or IE groups in wrong order or with too many occurrences (see subclause 10.3)
Message not Compatible with Receiver State	The received message was not compatible with the receiver state (see subclause 10.4)
Semantic Error	The received message included a semantic error (see subclause 10.4)
Transfer Syntax Error	The received message included a transfer syntax error (see subclause 10.2)
Unspecified	Sent when none of the above cause values applies but still the cause is Protocol related

<b>Miscellaneous cause</b>	<b>Meaning</b>
Control Processing Overload	DRNS control processing overload
Hardware Failure	DRNS hardware failure
Not enough User Plane Processing Resources	DRNS has insufficient user plane processing resources available
O&M Intervention	Operation and Maintenance intervention related to DRNS equipment
Unspecified	Sent when none of the above cause values applies and the cause is not related to any of the categories Radio Network Layer, Transport Network Layer or Protocol.

### 9.2.1.5A Cell Geographical Area Identity (Cell GAI)

The Cell Geographical Area is used to identify the geographical area of a cell. The area is represented as a polygon. See ref. [25].



IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
<b>Cell GAI Geographical Co-ordinates</b>		1 .. <maxnoofPoints>		
>Latitude Sign	M		ENUMERATED(North, South)	
>Degrees of Latitude	M		INTEGER(0..2 <sup>23</sup> -1)	The IE value (N) is derived by this formula: N ≤ 2 <sup>23</sup> X / 90 < N+1 X being the latitude in degree (0°.. 90°)
>Degrees of Longitude	M		INTEGER(-2 <sup>23</sup> ..2 <sup>23</sup> -1)	The IE value (N) is derived by this formula: N ≤ 2 <sup>24</sup> X / 360 < N+1 X being the longitude in degree (-180°..+180°)

Range bound	Explanation
maxnoofPoints	Maximum no. of points in polygon.

### 9.2.1.5B Cell Geographical Area Additional Shapes (Cell GAI Additional Shapes)

This IE is used to provide several descriptions of the geographical area of a cell.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
<b>CHOICE Cell GAI Additional Shapes</b>				
>GA Point With Uncertainty				
>>GA Point With Uncertainty	M		9.2.1.30A	Ellipsoid point with uncertainty circle
>GA Ellipsoid point with uncertainty Ellipse				
>>GA Ellipsoid point with uncertainty Ellipse	M		9.2.1.30B	Ellipsoid point with uncertainty Ellipse
>GA Ellipsoid point with altitude				
>>GA Ellipsoid point with altitude	M		9.2.1.30C	Ellipsoid point with altitude
>GA Ellipsoid point with altitude and uncertainty Ellipsoid				
>>GA Ellipsoid point with altitude and uncertainty Ellipsoid	M		9.2.1.30D	Ellipsoid point with altitude and uncertainty Ellipsoid
>GA Ellipsoid Arc				
>>GA Ellipsoid Arc	M		9.2.1.30E	Ellipsoid Arc

### 9.2.1.5C Cell Capacity Class Value

The *Cell Capacity Class Value* IE contains the capacity class for both the uplink and downlink. *Cell Capacity Class Value* IE is the value that classifies the cell capacity with regards to the other cells. *Cell Capacity Class Value* IE only indicates resources that are configured for traffic purposes.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Uplink Cell Capacity Class Value	M		INTEGER(1..100,...)	Value 1 shall indicate the minimum uplink cell capacity, and 100 shall indicate the maximum uplink cell capacity. There should be linear relation between uplink cell capacity and Uplink Cell Capacity Class Value.
Downlink Cell Capacity Class Value	M		INTEGER(1..100,...)	Value 1 shall indicate the minimum downlink cell capacity, and 100 shall indicate the maximum downlink cell capacity. There should be linear relation between downlink cell capacity and Downlink Cell Capacity Class Value.

### 9.2.1.5D Cell Global Identifier (CGI)

The *Cell Global Identifier* IE contains the Cell Global Identity as defined in ref. [1].

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
<b>LAI</b>		1		
>PLMN Identity	M		OCTET STRING (3)	<ul style="list-style-type: none"> <li>- digits 0 to 9, two digits per octet,</li> <li>- each digit encoded 0000 to 1001,</li> <li>- 1111 used as filler</li> <li>- bit 4 to 1 of octet n encoding digit 2n-1</li> <li>- bit 8 to 5 of octet n encoding digit 2n</li> <li>-The PLMN Identity consists of 3 digits from MCC followed by either</li> <li>-a filler plus 2 digits from MNC (in case of 2 digit MNC) or</li> <li>-3 digits from MNC (in case of a 3 digit MNC).</li> </ul>
>LAC	M		OCTET STRING (2)	0000 and FFFE not allowed
CI	M		OCTET STRING (2)	

### 9.2.1.6 Cell Identifier (C-ID)

The C-ID (Cell Identifier) is the identifier of a cell in one RNS.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
C-ID			INTEGER (0..65535)	

### 9.2.1.7 Cell Individual Offset

Cell individual offset is an offset that will be applied by UE to the measurement results for a Primary-CPICH[FDD]/ Primary-CCPCH[TDD] or for GSM Carrier RSSI according to [16].

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Cell Individual Offset			INTEGER(-20..+20)	-20 -> -10dB -19 -> -9.5dB ... +20 -> +10dB

### 9.2.1.8 Cell Parameter ID

The Cell Parameter ID identifies unambiguously the [3.84 Mcps TDD - Code Groups, Scrambling Codes, Midambles and Toffset] [1.28 Mcps TDD - SYNC-DL and SYNC-UL sequences, the scrambling codes and the midamble codes] (see ref. [20]).

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Cell Parameter ID			INTEGER(0..127,...)	

### 9.2.1.9 CFN

Connection Frame Number for the radio connection, see ref. [17].

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
CFN			INTEGER(0..255)	

#### 9.2.1.10 CFN Offset

Void

#### 9.2.1.11 CN CS Domain Identifier

Identification of the CN node in the CS Domain.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
PLMN Identity	M		OCTET STRING (3)	<ul style="list-style-type: none"> <li>- digits 0 to 9, two digits per octet,</li> <li>- each digit encoded 0000 to 1001,</li> <li>- 1111 used as filler</li> <li>- bit 4 to 1 of octet n encoding digit 2n-1</li> <li>- bit 8 to 5 of octet n encoding digit 2n</li> <li>-The PLMN Identity consists of 3 digits from MCC followed by either</li> <li>-a filler plus 2 digits from MNC (in case of 2 digit MNC) or</li> <li>-3 digits from MNC (in case of a 3 digit MNC).</li> </ul>
LAC	M		OCTET STRING (2)	0000 and FFFE not allowed

### 9.2.1.11A CN Domain Type

Identifies the type of core network domain.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
CN Domain Type			ENUMERATED (CS domain, PS domain, Don't care,...)	See in [16]

### 9.2.1.12 CN PS Domain Identifier

Identification of the CN Node in the PS Domain.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
PLMN Identity	M		OCTET STRING (3)	<ul style="list-style-type: none"> <li>- digits 0 to 9, two digits per octet,</li> <li>- each digit encoded 0000 to 1001,</li> <li>- 1111 used as filler</li> <li>- bit 4 to 1 of octet n encoding digit 2n-1</li> <li>- bit 8 to 5 of octet n encoding digit 2n</li> <li>-The PLMN Identity consists of 3 digits from MCC followed by either</li> <li>-a filler plus 2 digits from MNC (in case of 2 digit MNC) or</li> <li>-3 digits from MNC (in case of a 3 digit MNC).</li> </ul>
LAC	M		OCTET STRING (2)	0000 and FFFE not allowed
RAC	M		OCTET STRING (1)	

### 9.2.1.12A Common Measurement Accuracy

The Common Measurement Accuracy IE indicates the accuracy of the common measurement.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
CHOICE <i>Common Measurement Accuracy</i>	M			
> <i>T<sub>UTRAN-GPS</sub> Measurement Accuracy Class</i>				
>> <i>T<sub>UTRAN-GPS</sub> Measurement Accuracy Class</i>	M		<i>T<sub>UTRAN-GPS</sub> Accuracy Class</i> 9.2.1.59B	

### 9.2.1.12B Common Measurement Object Type

Void.

### 9.2.1.12C Common Measurement Type

The Common Measurement Type identifies which measurement that shall be performed.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Common Measurement Type			ENUMERATED (UTRAN GPS Timing of Cell Frames for UE Positioning , SFN-SFN Observed Time Difference, load, transmitted carrier power, received total wide band power, UL timeslot ISCP, ..., RT Load, NRT Load Information, UpPTS interference)	UL timeslot ISCP shall only be used by TDD. For measurements, which are requested on the Iur-g interface, only load, RT Load and NRT Load information are used. "UpPTS interference" is used by 1.28Mcps TDD only

### 9.2.1.12D Common Measurement Value

The Common Measurement Value shall be the most recent value for this measurement, for which the reporting criteria were met.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
CHOICE <i>Common Measurement Value</i>	M				–	
> <i>T<sub>UTRAN-GPS</sub> Measurement Value Information</i>				UTRAN only	–	
>>T <sub>UTRAN-GPS</sub> <i>Measurement Value Information</i>	M		9.2.1.59D		–	
> <i>SFN-SFN Measurement Value Information</i>				UTRAN only	–	
>>SFN-SFN <i>Measurement Value Information</i>	M		9.2.1.52C		–	
>Load <i>Value</i>					–	
>>Load <i>Value</i>	M		9.2.1.33A		–	
> <i>Transmitted Carrier Power Value</i>				UTRAN only	–	
>>Transmitted <i>Carrier Power Value</i>	M		Transmitted Carrier Power 9.2.1.59A		–	
> <i>Received Total Wide Band Power Value</i>				UTRAN only	–	
>>Received Total <i>Wide Band Power Value</i>	M		Received Total Wide Band Power 9.2.2.35A		–	
> <i>UL Timeslot ISCP Value</i>				TDD Only	–	
>>UL Timeslot <i>ISCP Value</i>	M		UL Timeslot ISCP 9.2.3.13A		–	
> <i>Additional Common Measurement Values</i>					–	
>>RT <i>Load Value</i>					–	
>>>RT <i>Load Value</i>	M		9.2.1.50B		YES	ignore
>>NRT <i>Load Information Value</i>					–	
>>>NRT <i>Load Information Value</i>	M		9.2.1.41I		YES	ignore
>>UpPTS <i>interference</i>				1.28Mcps TDD Only		
>>>UpPTS <i>interference Value</i>	M		INTEGER (0..127,...)	According to mapping in [24]		

### 9.2.1.12E Common Measurement Value Information

The *Common Measurement Value Information* IE provides information both on whether the Common Measurement Value is provided in the message or not and if provided also the Common Measurement Value itself.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
CHOICE <i>Measurement Availability</i>	M			
> <i>Measurement Available</i>				
>>Common <i>Measurement Value</i>	M		9.2.1.12D	
> <i>Measurement not Available</i>			NULL	

### 9.2.1.12F Common Transport Channel Resources Initialisation Not Required

If present, this IE indicates that as far as the DRNC is concerned, there is no need to initiate a Common Transport Channel Resources Initialisation procedure if the SRNC wants to allocate common transport channel resources in the new cell.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Common Transport Channel Resources Initialisation Not Required			ENUMERATED(Not Required)	

### 9.2.1.12G Coverage Indicator

The Coverage Indicator indicates whether the serving and the neighbouring cell are overlapped, i.e. the cells have approximately same coverage area or whether the neighbouring cell covers or contained in the serving cell.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Coverage Indicator			ENUMERATED(Overlap, Covers, Contained in,...)	

### 9.2.1.13 Criticality Diagnostics

The *Criticality Diagnostics* IE is sent by an RNC when parts of a received message have not been comprehended or were missing, or if the message contained logical errors. When applicable, it contains information about which IEs that were not comprehended or were missing.

For further details on how to use the *Criticality Diagnostics* IE, see Annex C.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Procedure ID		0..1		Procedure ID is to be used if Criticality Diagnostics is part of Error Indication procedure, and not within the response message of the same procedure that caused the error	-	
>Procedure Code	M		INTEGER(0..255)		-	
>Ddmode	M		ENUMERATED(FDD, TDD, Common)	Common = common to FDD and TDD. Common Ddmode is also applicable for luring procedures listed in section 7.	-	
Triggering Message	O		ENUMERATED(initiating message, successful outcome, unsuccessful outcome, outcome)	The Triggering Message is used only if the Criticality Diagnostics is part of Error Indication.	-	
Procedure Criticality	O		ENUMERATED(reject, ignore, notify)	This Procedure Criticality is used for reporting the Criticality of the Triggering message (Procedure).	-	
Transaction ID	O		Transaction ID		-	
<b>Information Element Criticality Diagnostics</b>		<i>0..&lt;max noof errors&gt;</i>			-	
>IE Criticality	M		ENUMERATED(reject, ignore, notify)	The IE Criticality is used for reporting the criticality of the triggering IE. The value "Ignore" shall never be used.	-	
>IE ID	M		INTEGER(0..65535)	The IE ID of the not understood or missing IE as defined in the ASN.1 part of the specification.	-	
>Repetition Number	O		INTEGER(0..255)	The <i>Repetition Number</i> IE gives <ul style="list-style-type: none"> <li>in case of a not understood IE: The number of occurrences of the reported IE up to and including the not understood occurrence</li> <li>in case of a missing IE: The number of occurrences up to but not including the missing occurrence.</li> </ul>	-	



				Note: All the counted occurrences of the reported IE must have the same topdown hierarchical message structure of IEs with assigned criticality above them.		
>Message Structure	O		9.2.1.39A	The <i>Message Structure</i> IE describes the structure in which the not understood or missing IE was detected. This IE is included if the not understood IE is not the top level of the message.	YES	ignore
>Type of Error	M		ENUMERATED(not understood, missing, ...)		YES	ignore

Range bound	Explanation
<i>maxnooferrors</i>	Maximum number of IE errors allowed to be reported with a single message.

#### 9.2.1.14 C-RNTI

C-RNTI (Cell RNTI) is the UE identifier allocated by the DRNS to be used over the radio interface. It is unique in the cell. One UE Context has one unique C-RNTI value allocated in the DRNS.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
C-RNTI			INTEGER(0..65535)	

#### 9.2.1.14A CTFC

The CTFC is an integer number calculated in accordance with [16], subclause 14.10. Regarding the channel ordering, for all transport channels, 'TrCH1' corresponds to the transport channel having the lowest transport channel identity among all configured transport channels on this CCTrCH. 'TrCH2' corresponds to the transport channel having the next lowest transport channel identity, and so on.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
CHOICE <i>CTFC Format</i>				
>2 bits long				
>>CTFC value	M		INTEGER (0..3)	
>4 bits long				
>>CTFC value	M		INTEGER (0..15)	
>6 bits long				
>>CTFC value	M		INTEGER (0..63)	
>8 bits long				
>>CTFC value	M		INTEGER (0..255)	
>12 bits long				
>>CTFC value	M		INTEGER (0..4095)	
>16 bits long				
>>CTFC value	M		INTEGER (0..65535)	
>max nb bits long				
>>CTFC value	M		INTEGER (0..maxCTFC)	

Range Bound	Explanation
MaxCTFC	<p>Maximum number of the CTFC value is calculated according to the following:</p> $\sum_{i=1}^I (L_i - 1)P_i$ <p>with the notation according to ref. [16]</p>

### 9.2.1.15 DCH Combination Indicator

Void

### 9.2.1.16 DCH ID

The DCH ID is the identifier of an active dedicated transport channel. It is unique for each active DCH among the active DCHs simultaneously allocated for the same UE.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
DCH ID			INTEGER (0..255)	

### 9.2.1.16A DCH Information Response

The *DCH Information* IE provides information for DCHs that have been established or modified.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
<b>DCH Information Response</b>		1..<maxno ofDCHs>		Several DCHs belonging to the same set of coordinated DCHs may be included.	–	
>DCH ID	M		9.2.1.16		–	
>Binding ID	O		9.2.1.3		–	
>Transport Layer Address	O		9.2.1.62		–	
>Allowed Rate Information	O		9.2.1.2A		YES	ignore

Range bound	Explanation
<i>maxnoofDCHs</i>	Maximum number of DCHs for one UE.

### 9.2.1.17 Dedicated Measurement Object Type

Void.

### 9.2.1.18 Dedicated Measurement Type

The Dedicated Measurement Type identifies the type of measurement that shall be performed.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Dedicated Measurement Type			ENUMERATED(SIR, SIR Error, Transmitted Code Power, RSCP, Rx Timing Deviation, Round Trip Time, ..., Rx Timing Deviation LCR, Angle Of Arrival LCR, HS-SICH Reception Quality)	RSCP and HS-SICH Receptions Quality are used by TDD only, Rx Timing Deviation is used by 3.84 TDD only, Rx Timing Deviation LCR is used by 1.28 TDD only, Round Trip Time, SIR Error are used by FDD only. Angle Of Arrival LCR is used by 1.28Mcps TDD only.

NOTE: For definitions of the measurement types refer to ref. [11] and [14].

### 9.2.1.19 Dedicated Measurement Value

The Dedicated Measurement Value shall be the most recent value for this measurement, for which the reporting criteria were met.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
CHOICE <i>Dedicated Measurement Value</i>	M				–	
> <i>SIR Value</i>					–	
>> <i>SIR Value</i>	M		INTEGER(0..63)	According to mapping in ref. [23] and [24]	–	
> <i>SIR Error Value</i>				FDD Only	–	
>> <i>SIR Error Value</i>	M		INTEGER(0..125)	According to mapping in [23]	–	
> <i>Transmitted Code Power Value</i>					–	
>> <i>Transmitted Code Power Value</i>	M		INTEGER(0..127)	According to mapping in ref. [23] and [24] Values 0 to 9 and 123 to 127 shall not be used.	–	
> <i>RSCP</i>				TDD Only	–	
>> <i>RSCP</i>	M		INTEGER(0..127)	According to mapping in ref. [24]	–	
> <i>Rx Timing Deviation Value</i>				3.84Mcps TDD Only	–	
>> <i>Rx Timing Deviation</i>	M		INTEGER(0..8191)	According to mapping in [24]	–	
> <i>Round Trip Time</i>				FDD Only	–	
>> <i>Round Trip Time</i>	M		INTEGER(0..32767)	According to mapping in [23]	–	
> <i>Additional Dedicated Measurement Values</i>					–	
>> <i>Rx Timing Deviation Value LCR</i>				1.28Mcps TDD Only	YES	reject
>>> <i>Rx Timing Deviation LCR</i>	M		INTEGER(0..511)	According to mapping in [24]	–	
>> <i>Angle of Arrival Value LCR</i>				1.28Mcps TDD only	YES	reject
>>> <i>AOA LCR</i>	M		INTEGER(0..719)	According to mapping in [24]	–	
>>> <i>AOA LCR Accuracy Class</i>	M		ENUMERATED(A, B, C, D, E, F, G, H,...)	According to mapping in [24]	–	
>> <i>HS-SICH reception quality</i>				Applicable to TDD only	–	
>>> <i>HS-SICH reception quality Value</i>		1			YES	reject
>>>> <i>Failed HS-SICH</i>	M		INTEGER(0..20)	According to mapping in [24]	–	
>>>> <i>Missed HS-SICH</i>	M		INTEGER(0..20)	According to mapping in [24]	–	
>>>> <i>Total HS-SICH</i>	M		INTEGER(0..20)	According to mapping in [24]	–	

### 9.2.1.19A Dedicated Measurement Value Information

The *Dedicated Measurement Value Information* IE provides information both on whether or not the Dedicated Measurement Value is provided in the message and if provided also the Dedicated Measurement Value itself.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
CHOICE <i>Measurement Availability Indicator</i>	M				–	
> <i>Measurement Available</i>					–	
>>Dedicated Measurement Value	M		9.2.1.19		–	
>>CFN	O		9.2.1.9	Dedicated Measurement Time Reference	–	
> <i>Measurement not Available</i>			NULL		–	

### 9.2.1.19Aa Delayed Activation

The *Delayed Activation* IE indicates that the activation of the DL power shall be delayed until an indicated CFN or until a separate activation indication is received.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
CHOICE <i>Delayed Activation</i>	M			
> <i>CFN</i>				
>> Activation CFN	M		CFN 9.2.1.7	
> <i>Separate Indication</i>			NULL	

### 9.2.1.19Ab Delayed Activation Update

The *Delayed Activation Update* IE indicates a change of the activation of the DL power for a specific RL.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
CHOICE <i>Delayed Activation Update</i>	M			
> <i>Activate</i>				
>> CHOICE <i>Activation Type</i>	M			
>>> <i>Synchronised</i>				
>>>> Activation CFN	M		CFN 9.2.1.7	
>>> <i>Unsynchronised</i>			NULL	
>> Initial DL TX Power	M		DL Power 9.2.1.21	
>> First RLS Indicator	O		9.2.2.16A	FDD Only
>> Propagation Delay	O		9.2.2.35	FDD Only
> <i>Deactivate</i>				
>> CHOICE <i>Deactivation type</i>	M			
>>> <i>Synchronised</i>				
>>>> Deactivation CFN	M		CFN 9.2.1.7	
>>> <i>Unsynchronised</i>			NULL	

### 9.2.1.19B DGPS Corrections

The DGPS Corrections IE contains DGPS information used by the UE Positioning A-GPS method. For further details on the meaning of parameters, see [31].

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
GPS TOW	M		INTEGER(0..604799)	Time in seconds. This field indicates the baseline time for which the corrections are valid
Status/Health	M		ENUMERATED (UDRE scale 1.0, UDRE scale 0.75, UDRE scale 0.5, UDRE scale 0.3, UDRE scale 0.1, no data, invalid data)	This field indicates the status of the differential corrections
<b>Satellite DGPS Corrections Information</b>		1..<maxNoSat>		
>SatID	M		SAT ID 9.2.1.50A	Satellite ID
>IODE	M		BIT STRING(8)	This IE is the sequence number for the ephemeris for the particular satellite. It can be used to determine if new ephemeris is used for calculating the corrections that are provided. This eight-bit IE is incremented for each new set of ephemeris for the satellite and may occupy the numerical range of [0, 239] during normal operations.
>UDRE	M		ENUMERATED (UDRE $\leq 1.0m$ , $1.0m < UDRE \leq 4.0m$ , $4.0m < UDRE \leq 8.0m$ , $8.0m < UDRE, \dots$ )	User Differential Range Error. This field provides an estimate of the uncertainty ( $1-\sigma$ ) in the corrections for the particular satellite. The value in this field shall be multiplied by the UDRE Scale Factor in the common Corrections Status/Health field to determine the final UDRE estimate for the particular satellite
>PRC	M		INTEGER(-2047..2047)	Scaling factor 0.32 meters
>Range Correction Rate	M		INTEGER(-127.. 127)	Scaling factor 0.032 m/s

Range Bound	Explanation
<i>maxNoSat</i>	Maximum number of satellites for which information can be provided

### 9.2.1.19C Discard Timer

The *Discard Timer* IE defines the time to live for a MAC-hs SDU starting from the instant of its arrival into an HSDPA Priority Queue. The DRNS shall use this information to discard out-of-date MAC-hs SDUs from the HSDPA Priority Queues.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Discard Timer			ENUMERATED (20, 40, 60, 80, 100, 120, 140, 160, 180, 200, 250, 300, 400, 500, 750, 1000, 1250, 1500, 1750, 2000, 2500, 3000, 3500, 4000, 4500, 5000, 7500, ...)	Unit: ms

### 9.2.1.20 Diversity Control Field

The Diversity Control Field indicates if the current RL may, must or must not be combined with the already existing RLs.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Diversity Control Field			ENUMERATED (May, Must, Must not, ...)	

### 9.2.1.21 Diversity Indication

Void.

#### 9.2.1.21A DL Power

The *DL Power* IE indicates a power level relative to the [FDD - primary CPICH power] [TDD - PCCPCH power] configured in a cell [FDD - If referred to a DPCH, it indicates the power of the transmitted DPDCH symbols]. If Transmit Diversity is applied to a downlink physical channel, the *DL Power* IE indicates the power offset between the linear sum of the power for this downlink physical channel on all branches and the [FDD - primary CPICH power] [TDD - PCCPCH power] configured in a cell.

[TDD - If referred to a DPCH, it indicates the power of a spreading factor 16 code, the power for a spreading factor 1 code would be 12 dB higher].

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
DL Power			INTEGER (-350..150)	Value = DL Power /10 Unit dB Range -35.0 .. +15.0 Step 0.1dB

### 9.2.1.22 Downlink SIR Target

Void

### 9.2.1.23 DPCH Constant Value

DPCH Constant Value is the power margin used by a UE to set the proper uplink power.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
DPCH Constant Value			INTEGER (-10..10)	Unit dB Granularity 1 dB.

### 9.2.1.24 D-RNTI

The D-RNTI identifies the UE Context in the DRNC.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
D-RNTI			INTEGER(0.. $2^{20}-1$ )	

### 9.2.1.25 D-RNTI Release Indication

The D-RNTI Release Indication indicates whether or not a DRNC shall release the D-RNTI allocated for a particular UE.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
D-RNTI Release Indication			ENUMERATED(Release D-RNTI, not Release D-RNTI)	

### 9.2.1.26 DRX Cycle Length Coefficient

The DRX Cycle Length Coefficient is used as input for the formula to establish the paging occasions to be used in DRX.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
DRX Cycle Length Coefficient			INTEGER (3..9)	Refers to 'k' in the formula as specified in ref. [15], Discontinuous Reception.

### 9.2.1.26A DSCH ID

The DSCH ID is the identifier of an active downlink shared channel. It is unique for each active DSCH among the active DSCHs simultaneously allocated for the same UE.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
DSCH ID			INTEGER (0..255)	

### 9.2.1.26Aa DSCH Initial Window Size

Indicates the initial number of MAC-c/sh SDUs that may be transmitted before new credits are received from the DRNC.



IE/Group Name	Presence	Range	IE type and reference	Semantics description
DSCH Initial Window Size			INTEGER (1..255)	Number of MAC-c/sh SDUs: 255 = Unlimited number of MAC-c/sh SDUs.

### 9.2.1.26B DSCH Flow Control Information

The *DSCH Flow Control Information* IE provides flow control information for each scheduling priority class for the DSCH FP over Iur.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
<b>DSCH Flow Control Information</b>		1..16			–	
>DSCH Scheduling Priority	M		Scheduling Priority Indicator 9.2.1.51A		–	
<b>&gt;MAC-c/sh SDU Length</b>		1..<maxNb MAC-c/shSDULength>			–	
>>MAC-c/sh SDU Length	M		9.2.1.34		–	
>DSCH Initial Window Size	O		9.2.1.26Aa		YES	Ignore

Range bound	Explanation
maxNbMAC-c/shSDULength	Maximum number of different MAC-c/sh SDU lengths.

### 9.2.1.26Ba DSCH-RNTI

DSCH-RNTI is the UE identifier allocated by DRNS to be used over the radio interface by UEs having one or several DSCHs [TDD – and/or USCHs]. It is unique within a cell.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
DSCH-RNTI			INTEGER(0..65535)	

### 9.2.1.26Bb Extended GSM Cell Individual Offset

Extended GSM Cell individual offset is an offset that will be applied by UE to the measurement results for GSM carrier RSSI according to [16]. It shall be used when the offset exceeds the range of values that can be indicated using the *Cell Individual Offset* IE (Subclause 9.2.1.7).

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Extended GSM Cell Individual Offset			INTEGER (-50..-11   11..50)	Unit in dB. Step size is 1 dB.

### 9.2.1.26C FACH Flow Control Information

The *FACH Flow Control Information* IE provides flow control information for each scheduling priority class for the FACH FP over Iur.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
<b>FACH Flow Control Information</b>		1..16			–	
>FACH Scheduling Priority	M		Scheduling Priority Indicator 9.2.1.51A		–	
<b>&gt;MAC-c/sh SDU Length</b>		1..<maxNb MAC-c/shSDULength>			–	
>>MAC-c/sh SDU Length	M		9.2.1.34		–	
>FACH Initial Window Size	M		9.2.1.27		–	

Range bound	Explanation
<i>maxNbMAC-c/shSDULength</i>	Maximum number of different MAC-c/sh SDU lengths.

### 9.2.1.27 FACH Initial Window Size

Indicates the initial number of MAC-c/sh SDUs that may be transmitted before an acknowledgement is received from the DRNC.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
FACH Initial Window Size			INTEGER(0..255)	Number of frames (MAC-c/sh SDUs.) 255 = Unlimited number of FACH data frames.

### 9.2.1.28 FACH Priority Indicator

Void

### 9.2.1.28A FN Reporting Indicator

Frame Number reporting indicator.

Indicates if the SFN or CFN shall be included together with the reported measurement value.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
FN reporting indicator			ENUMERATED(FN reporting required, FN reporting not required)	

### 9.2.1.29 Frame Handling Priority

This parameter indicates the priority level to be used during the lifetime of the DCH/DSCH for temporary restriction of the allocated resources due overload reason.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Frame Handling Priority			INTEGER (0..15)	0=Lowest Priority, ... 15=Highest Priority

### 9.2.1.30 Frame Offset

Frame Offset is the required offset between the dedicated channel downlink transmission frames (CFN, Connection Frame Number) and the broadcast channel frame offset (Cell Frame Number). The Frame Offset is used in the translation between Connection Frame Number (CFN) on Iub/Iur and least significant 8 bits of SFN (System Frame Number) on Uu. The Frame Offset is UE and cell specific.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Frame Offset			INTEGER (0..255)	Frames

### 9.2.1.30A GA Point with Uncertainty

This IE contains one of the possible descriptions of a Cell Geographical Area.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Geographical Coordinates	M		9.2.1.30F	
Uncertainty Code	M		INTEGER(0..127)	The uncertainty "r" is derived from the "uncertainty code" k by $r = 10 \times (1.1^k - 1)$

### 9.2.1.30B GA Ellipsoid Point with Uncertainty Ellipse

This IE contains one of the possible descriptions of a Cell Geographical Area.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Geographical Coordinates	M		9.2.1.30F	
Uncertainty Ellipse	M		9.2.1.68A	
Confidence	M		INTEGER(0..127)	

### 9.2.1.30C GA Ellipsoid Point with Altitude

This IE contains one of the possible descriptions of a Cell Geographical Area.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Geographical Coordinates	M		9.2.1.30F	
Altitude and direction	M		9.2.1.2B	

### 9.2.1.30D GA Ellipsoid Point with Altitude and Uncertainty Ellipsoid

This IE contains one of the possible descriptions of a Cell Geographical Area.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Geographical Coordinates	M		9.2.1.30F	
Altitude and direction	M		9.2.1.2B	
Uncertainty Ellipse	M		9.2.1.68A	
Uncertainty Altitude	M		INTEGER(0..127)	
Confidence	M		INTEGER(0..127)	

### 9.2.1.30E GA Ellipsoid Arc

This IE contains one of the possible descriptions of a Cell Geographical Area.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Geographical Coordinates	M		9.2.1.30F	
Inner radius	M		INTEGER(0..2 <sup>16</sup> -1)	The relation between the value (N) and the radius (r) in meters it describes is $5N \leq r < 5(N+1)$ , except for $N=2^{16}-1$ for which the range is extended to include all greater values of (r).
Uncertainty radius	M		INTEGER(0..127)	The uncertainty "r" is derived from the "uncertainty code" k by $r = 10 \times (1.1^k - 1)$
Offset angle	M		INTEGER(0..179)	The relation between the value (N) and the angle (a) in degrees it describes is $2N \leq a < 2(N+1)$
Included angle	M		INTEGER(0..179)	The relation between the value (N) and the angle (a) in degrees it describes is $2N < a \leq 2(N+1)$
Confidence	M		INTEGER(0..127)	

### 9.2.1.30F Geographical Coordinates

This IE contains the description of geographical coordinates.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Latitude Sign	M		ENUMERATED(North, South)	
Degrees Of Latitude	M		INTEGER(0..2 <sup>23</sup> -1)	The IE value (N) is derived by this formula: $N \leq 2^{23} \times X / 90 < N+1$ X being the latitude in degree (0°.. 90°)
Degrees Of Longitude	M		INTEGER(-2 <sup>23</sup> ..2 <sup>23</sup> -1)	The IE value (N) is derived by this formula: $N \leq 2^{24} \times X / 360 < N+1$ X being the longitude in degree (-180°..+180°)

### 9.2.1.30Fa GERAN Cell Capability

The *GERAN Cell Capability* IE is used to transfer the capabilities of a certain GERAN cell via the Iur interface.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
GERAN Cell Capability	M		BIT STRING (16)	Each bit indicates whether a cell supports a particular functionality or not. The value 1 of a bit indicates that the corresponding functionality is supported in a cell and value 0 indicates that the corresponding functionality is not supported in a cell. Each bit is defined as follows. The first bit: A/Gb mode. The second bit: Iu mode. Note that undefined bits are considered as a spare bit and spare bits shall be set to 0 by the transmitter and shall be ignored by the receiver.

### 9.2.1.30Fb GERAN Classmark

The *GERAN Classmark* IE is used to transfer the capabilities of a certain GERAN Iu-mode capable cell via the Iur interface.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
GERAN Classmark	M		OCTET STRING	Contents defined in [38]

### 9.2.1.30Fc GERAN System Information

The *GERAN System Information* IE provides GERAN specific information.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
<b>GERAN System Info</b>		<i>1..&lt;maxNrOfGERANSI&gt;</i>		
>GERAN System Info Block	M		OCTET STRING (1..23)	The first octet contains octet 1 of the GERAN system information block, the second octet contains octet 2 of the GERAN system information block and so on.

Range bound	Explanation
<i>maxNrOfGERANSI</i>	Maximum number of GERAN SI blocks that can be provided as part of NACC information

### 9.2.1.30G GPS Almanac

This IE provides the information regarding the GPS Almanac. For further details on the meaning of parameters, see [30].

IE/Group name	Presence	Range	IE Type and Reference	Semantics Description
WN <sub>a</sub>	M		BIT STRING(8)	
<b>Satellite Almanac Information</b>	M	1..<maxNoOfSatAlmanac>		See Note 1.
>DataID	M		INTEGER (0..3)	
>SatID	M		SAT ID 9.2.1.50A	Satellite ID
>e	M		BIT STRING(16)	
>t <sub>oa</sub>	M		BIT STRING(8)	
>δl	M		BIT STRING(16)	
>OMEGADOT	M		BIT STRING(16)	
>SV Health	M		BIT STRING(8)	
>A <sup>1/2</sup>	M		BIT STRING(24)	
>OMEGA <sub>0</sub>	M		BIT STRING(24)	
>M <sub>0</sub>	M		BIT STRING(24)	
>ω	M		BIT STRING(24)	
>af <sub>0</sub>	M		BIT STRING(11)	
>af <sub>1</sub>	M		BIT STRING(11)	
SV Global Health	O		BIT STRING(364)	

Range Bound	Explanation
<i>maxNoOfSatAlmanac</i>	Maximum number of satellite almanacs for which information can be provided

Note 1: This information element is a simplified representation of the ASN.1 description. Repetitions 1 through maxNoSat and repetitions maxNoSat+1 through maxNoOfSatAlmanac are represented by separate ASN.1 structures with different criticality.

### 9.2.1.30H GPS Ionospheric Model

This IE provides the information regarding the GPS Ionospheric Model. For further details on the meaning of parameters, see [30].

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
$\alpha_0$	M		BIT STRING(8)	
$\alpha_1$	M		BIT STRING(8)	
$\alpha_2$	M		BIT STRING(8)	
$\alpha_3$	M		BIT STRING(8)	
$\beta_0$	M		BIT STRING(8)	
$\beta_1$	M		BIT STRING(8)	
$\beta_2$	M		BIT STRING(8)	
$\beta_3$	M		BIT STRING(8)	

### 9.2.1.30I GPS Navigation Model and Time Recovery

This IE contains subframes 1 to 3 of the GPS navigation message. For further details on the meaning of parameters, see [30].

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
<b>Navigation Message 1to3</b>		<i>1..&lt;maxNoSat&gt;</i>		
>Transmission TOW	M		INTEGER0..1048575)	Time of the Week when the message is broadcast.
>SatID	M		SAT ID 9.2.1.50A	Satellite ID of the satellite from which the information is obtained
>TLM Message	M		BIT STRING(14)	
>Tlm Revd (C)	M		BIT STRING(2)	
>HO-Word	M		BIT STRING(22)	
>WN	M		BIT STRING(10)	
>C/A or P on L2	M		BIT STRING(2)	
>User Range Accuracy Index	M		BIT STRING(4)	
>SV Health	M		BIT STRING(6)	
>IODC	M		BIT STRING(10)	
>L2 P Data Flag	M		BIT STRING(1)	
>SF 1 Reserved	M		BIT STRING(87)	
>T <sub>GD</sub>	M		BIT STRING(8)	
>t <sub>oc</sub>	M		BIT STRING(16)	
>af <sub>2</sub>	M		BIT STRING(8)	
>af <sub>1</sub>	M		BIT STRING(16)	
>af <sub>0</sub>	M		BIT STRING(22)	
>C <sub>rs</sub>	M		BIT STRING(16)	
>Δn	M		BIT STRING(16)	
>M <sub>0</sub>	M		BIT STRING(32)	
>C <sub>uc</sub>	M		BIT STRING(16)	
>e	M		BIT STRING(32)	
>C <sub>us</sub>	M		BIT STRING(16)	
>(A) <sup>1/2</sup>	M		BIT STRING(32)	
>t <sub>oe</sub>	M		BIT STRING(16)	
>Fit Interval Flag	M		BIT STRING(1)	
>AODO	M		BIT STRING(5)	
>C <sub>ic</sub>	M		BIT STRING(16)	
>OMEGA <sub>0</sub>	M		BIT STRING(32)	
>C <sub>is</sub>	M		BIT STRING(16)	
>i <sub>0</sub>	M		BIT STRING(32)	



>C <sub>rc</sub>	M		BIT STRING(16)	
>ω	M		BIT STRING(32)	
>OMEGA <sub>dot</sub>	M		BIT STRING(24)	
>I <sub>dot</sub>	M		BIT STRING(14)	
>Spare/zero fill	M		BIT STRING(20)	

Range Bound	Explanation
<i>maxNoSat</i>	Maximum number of satellites for which information can be provided

### 9.2.1.30J GPS Real-Time Integrity

This IE provides the information regarding the status of the GPS constellation. For further details on the meaning of parameters, see [30].

IE/Group name	Presence	Range	IE Type and Reference	Semantics Description
<i>CHOICE Bad Satellites Presence</i>	M			
> <i>Bad Satellites</i>				
>> <b>Satellite Information</b>		1..<maxNoSat>		
>>>BadSatID	M		SAT ID 9.2.1.50A	Satellite ID
> <i>No Bad Satellites</i>			NULL	

Range Bound	Explanation
<i>MaxNoSat</i>	Maximum number of satellites for which information can be provided

### 9.2.1.30K GPS Receiver Geographical Position (GPS RX Pos)

The GPS Receiver Geographical Position is used to identify the geographical coordinates of a GPS receiver relevant for a certain Information Exchange Object.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Geographical Coordinates	M		9.2.1.30F	
Altitude and direction	M		9.2.1.2B	

### 9.2.1.30L GPS UTC Model

This IE provides the information regarding the GPS UTC Model. For further details on the meaning of parameters, see [30].

IE/Group name	Presence	Range	IE Type and Reference	Semantics Description
A <sub>1</sub>	M		BIT STRING(24)	
A <sub>0</sub>	M		BIT STRING(32)	
t <sub>tot</sub>	M		BIT STRING(8)	
Δt <sub>LS</sub>	M		BIT STRING(8)	
WN <sub>t</sub>	M		BIT STRING(8)	
WN <sub>LSF</sub>	M		BIT STRING(8)	
DN	M		BIT STRING(8)	
Δt <sub>LSF</sub>	M		BIT STRING(8)	

### 9.2.1.30M Guaranteed Rate Information

The *Guaranteed Rate Information* IE indicates the TFI corresponding to the guaranteed bit rate for the uplink and/or the downlink of a DCH.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Guaranteed UL Rate	O		INTEGER(1. .maxTFcount )	"1": TFI 0, "2": TFI 1, "3": TFI 2, ...
Guaranteed DL Rate	O		INTEGER(1. .maxTFcount )	"1": TFI 0, "2": TFI 1, "3": TFI 2, ...

### 9.2.1.30N HCS Prio

The HCS Prio is the characteristics of the cell as defined in [15].

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
HCS Prio			INTEGER (0..7)	0=Lowest Priority, ... 7=Highest Priority

### 9.2.1.30NA HS-DSCH Information To Modify Unsynchronised

The *HS-DSCH Information To Modify Unsynchronised* IE is used for modification of HS-DSCH information in a UE Context with the Unsynchronised Radio Link Reconfiguration procedure.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
<b>HS-DSCH MAC-d Flow Specific Information</b>		<i>0..&lt;maxnoofMACdFlows&gt;</i>		
>HS-DSCH MAC-d Flow ID	M		9.2.1.30O	
>Allocation/Retention Priority	O		9.2.1.1	
>Transport Bearer Request Indicator	M		9.2.1.61	
>Traffic Class	O		9.2.1.58A	
>Binding ID	O		9.2.1.3	Shall be ignored if bearer establishment with ALCAP.
>Transport Layer Address	O		9.2.1.62	Shall be ignored if bearer establishment with ALCAP.
<b>Priority Queue Information</b>		<i>0..&lt;maxnoofPrioQueues&gt;</i>		
>Priority Queue ID	M		9.2.1.45A	
>Scheduling Priority Indicator	O		9.2.1.51A	
>Discard Timer	O		9.2.1.19C	
>MAC-hs Guaranteed Bit Rate	O		9.2.1.34C	
CQI Power Offset	O		9.2.2.24b	For FDD only
ACK Power Offset	O		9.2.2.b	For FDD only
NACK Power Offset	O		9.2.2.26a	For FDD only
HS-SCCH Power Offset	O		9.2.2.19d	For FDD only
TDD ACK NACK Power Offset	O		9.2.3.71	For TDD only

### 9.2.1.30Na HS-DSCH Initial Capacity Allocation

The *HS-DSCH Initial Capacity Allocation* IE provides flow control information for each scheduling priority class for the HS-DSCH FP over Iur.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
<b>HS-DSCH Initial Capacity Allocation</b>		<i>1..&lt;maxnoofPriorityQueues&gt;</i>		
>Scheduling Priority Indicator	M		9.2.1.51A	
>Maximum MAC-d PDU Size	M		MAC-d PDU Size 9.2.1.34A	
>HS-DSCH Initial Window Size	M		9.2.1.30Nb	

Range Bound	Explanation
<i>maxnoofPrioQueues</i>	Maximum number of Priority Queues

### 9.2.1.30Nb HS-DSCH Initial Window Size

Indicates the initial number of MAC-d PDUs that may be transmitted before new credits are received from the DRNC.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
HS-DSCH Initial Window Size			INTEGER (1..255)	Number of MAC-d PDUs

### 9.2.1.30O HS-DSCH MAC-d Flow ID

HS-DSCH MAC-d Flow ID is the unique identifier for one MAC-d flow.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
HS-DSCH MAC-d Flow ID			INTEGER (0..7)	

### 9.2.1.30OA HS-DSCH MAC-d Flows Information

The *HS-DSCH MAC-d Flows Information* IE is used for the establishment of HS-DSCH MAC-d flows for a UE Context.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
<b>HS-DSCH MAC-d Flow Specific Information</b>		1..<maxno ofMACdFlows>		
>HS-DSCH MAC-d Flow ID	M		9.2.1.30O	
>Allocation/Retention Priority	M		9.2.1.1	
>Traffic Class	M		9.2.1.58A	
>Binding ID	O		9.2.1.3	Shall be ignored if bearer establishment with ALCAP.
>Transport Layer Address	O		9.2.1.62	Shall be ignored if bearer establishment with ALCAP.
<b>Priority Queue Information</b>		1..<maxno ofPrioQueues>		
>Priority Queue ID	M		9.2.1.45A	
>Associated HS-DSCH MAC-d Flow	M		HS-DSCH MAC-d Flow ID 9.2.1.30O	The HS-DSCH MAC-d Flow ID shall be one of the flow IDs defined in the HS-DSCH MAC-d Flow Specific Information of this IE. Multiple Priority Queues can be associated with the same HS-DSCH MAC-d Flow ID.
>Scheduling Priority Indicator	M		9.2.1.51A	
>T1	M		9.2.1.54A	
>Discard Timer	O		9.2.1.19C	
>MAC-hs Window Size	M		9.2.1.34C	
>MAC-hs Guaranteed Bit Rate	O		9.2.1.34Aa	
<b>&gt;MAC-d PDU Size Index</b>		1..<maxno ofMACdPDUindexes>		
>>SID	M		9.2.1.52D	
>>MAC-d PDU Size	M		9.2.1.34A	
>RLC Mode	M		9.2.1.48D	

Range Bound	Explanation
<i>maxnoofMACdFlows</i>	Maximum number of HS-DSCH MAC-d flows
<i>maxnoofPrioQueues</i>	Maximum number of Priority Queues
<i>maxnoofMACdPDUindexes</i>	Maximum number of different MAC-d PDU SIDs

### 9.2.1.30OB HS-DSCH MAC-d Flows To Delete

The *HS-DSCH MAC-d Flows To Delete* IE is used for the removal of HS-DSCH MAC-d flows from a UE Context.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
<b>HS-DSCH MAC-d Flows To Delete</b>		1..<maxno ofMACdFlows>		
>HS-DSCH MAC-d Flow ID	M		9.2.1.30O	

Range Bound	Explanation
<i>maxnoofMACdFlows</i>	Maximum number of HS-DSCH MAC-d flows

### 9.2.1.300C E-DCH MAC-d Flows Information

The *E-DCH MAC-d Flows Information* IE is used for the establishment of E-DCH MAC-d flows.

<u>IE/Group Name</u>	<u>Presence</u>	<u>Range</u>	<u>IE Type and Reference</u>	<u>Semantics Description</u>
<u>E-DCH MAC-d Flow Specific Information</u>		<u>1..&lt;maxno ofMACdFl ows&gt;</u>		
>E-DCH MAC-d Flow ID	M		9.2.1.300E	
>Binding ID	O		9.2.1.3	Shall be ignored if bearer establishment with ALCAP.
>Transport Layer Address	O		9.2.1.62	Shall be ignored if bearer establishment with ALCAP.

<u>Range Bound</u>	<u>Explanation</u>
<u>maxnoofMACdFlows</u>	Maximum number of HS-DSCH MAC-d flows

### 9.2.1.300D E-DCH MAC-d Flows To Delete

The *E-DCH MAC-d Flows To Delete* IE is used for the removal of E-DCH MAC-d flows.

<u>IE/Group Name</u>	<u>Presence</u>	<u>Range</u>	<u>IE Type and Reference</u>	<u>Semantics Description</u>
<u>E-DCH MAC-d Flows To Delete</u>		<u>1..&lt;maxno ofMACdFl ows&gt;</u>		
>E-DCH MAC-d Flow ID	M		9.2.1.300E	

<u>Range Bound</u>	<u>Explanation</u>
<u>maxnoofMACdFlows</u>	Maximum number of HS-DSCH MAC-d flows

### 9.2.1.300E E-DCH MAC-d Flow ID

The E-DCH MAC-d Flow ID is the unique identifier for one MAC-d flow on E-DCH.

Note: The actual range needs to be verified with RAN2 and is FFS.

<u>IE/Group Name</u>	<u>Presence</u>	<u>Range</u>	<u>IE Type and Reference</u>	<u>Semantics Description</u>
<u>E-DCH MAC-d Flow ID</u>			<u>INTEGER (0..7)</u>	

### 9.2.1.300F Maximum Number of Retransmissions for E-DCH

The *Maximum Number of Retransmissions for E-DCH* IE specifies the upper boundary for retransmissions for a single re-ordering queue/MAC-d flow.

<u>IE/Group Name</u>	<u>Presence</u>	<u>Range</u>	<u>IE Type and Reference</u>	<u>Semantics Description</u>
<u>Maximum Number of Retransmissions for E-DCH</u>			<u>INTEGER (0..15)</u>	

### 9.2.1.300H MAC-e Guaranteed Bit Rate

The *MAC-e Guaranteed Bit Rate* IE indicates the guaranteed number of bits per second to be delivered over the air interface under normal operating conditions (provided there is data to deliver) for which the Node B shall provide sufficient UL resources.

<u>IE/Group Name</u>	<u>Presence</u>	<u>Range</u>	<u>IE type and reference</u>	<u>Semantics description</u>
<u>MAC-e Guaranteed Bit Rate</u>			<u>INTEGER (0..2<sup>24</sup>-1, ...)</u>	<u>Unit: bit/s</u>

### 9.2.1.300a HS-DSCH Physical Layer Category

The *HS-DSCH Physical Layer Category* IE defines a set of UE radio access capabilities related to HSDPA, as defined in [42].

<b>IE/Group Name</b>	<b>Presence</b>	<b>Range</b>	<b>IE Type and Reference</b>	<b>Semantics Description</b>
HS-DSCH Physical Layer Category			INTEGER (1..64,...)	

### 9.2.1.30P HS-DSCH-RNTI

The HS-DSCH-RNTI is needed for the UE-specific CRC in HS-SCCH and HS-DSCH.

<b>IE/Group Name</b>	<b>Presence</b>	<b>Range</b>	<b>IE Type and Reference</b>	<b>Semantics Description</b>
HS-DSCH-RNTI			INTEGER (0..65535)	

### 9.2.1.30Q HS-DSCH Information To Modify

The *HS-DSCH Information To Modify* IE is used for modification of HS-DSCH information in a UE Context.



IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
<b>HS-DSCH MAC-d Flow Specific Information</b>		<i>0..&lt;maxnoofMAC dFlows&gt;</i>		
>HS-DSCH MAC-d Flow ID	M		9.2.1.300	
>Allocation/Retention Priority	O		9.2.1.1	
>Transport Bearer Request Indicator	M		9.2.1.61	
>Traffic Class	O		9.2.1.58A	
>Binding ID	O		9.2.1.3	Shall be ignored if bearer establishment with ALCAP.
>Transport Layer Address	O		9.2.1.62	Shall be ignored if bearer establishment with ALCAP.
<b>Priority Queue Information</b>		<i>0..&lt;maxnoofPriorityQueues&gt;</i>		
>CHOICE <i>Priority Queue</i>	M			
>>Add <i>Priority Queue</i>				
>>>Priority Queue ID	M		9.2.1.45A	
>>>Associated HS-DSCH MAC-d Flow	M		HS-DSCH MAC-d Flow ID 9.2.1.300	Shall only refer to a HS-DSCH MAC-d flow already existing in the old configuration. Multiple Priority Queues can be associated with the same HS-DSCH MAC-d Flow ID.
>>>Scheduling Priority Indicator	M		9.2.1.51A	
>>>T1	M		9.2.1.54A	
>>>Discard Timer	O		9.2.1.19C	
>>>MAC-hs Window Size	M		9.2.1.34C	
>>>MAC-hs Guaranteed Bit Rate	O		9.2.1.34Aa	
>>>MAC-d PDU Size Index		<i>1..&lt;maxnoofMAC dPDUindexes&gt;</i>		
>>>>SID	M		9.2.1.52D	
>>>>MAC-d PDU Size	M		9.2.1.34A	
>>>>RLC Mode	M		9.2.1.48D	
>>Modify <i>Priority Queue</i>				
>>>Priority Queue ID	M		9.2.1.45A	Shall only refer to a Priority Queue already existing in the old configuration.
>>>Scheduling Priority Indicator	O		9.2.1.51A	
>>>T1	O		9.2.1.54A	
>>>Discard Timer	O		9.2.1.19C	
>>>MAC-hs Window Size	O		9.2.1.34C	
>>>MAC-hs Guaranteed Bit Rate	O		9.2.1.34Aa	
>>>MAC-d PDU Size Index		<i>0..&lt;maxnoofMAC dPDUindexes&gt;</i>		
>>>>SID	M		9.2.1.52D	
>>>>MAC-d PDU Size	M		9.2.1.34A	
>>Delete <i>Priority Queue</i>				
>>>Priority Queue ID	M		9.2.1.45A	Shall only refer to a Priority Queue already existing in the old configuration.
MAC-hs Reordering Buffer Size for RLC-UM	O		9.2.1.34Ab	
CQI Feedback Cycle k	O		9.2.2.24a	For FDD only
CQI Repetition Factor	O		9.2.2.24c	For FDD only
ACK-NACK Repetition Factor	O		9.2.2.a	For FDD only
CQI Power Offset	O		9.2.2.24b	For FDD only
ACK Power Offset	O		9.2.2.b	For FDD only
NACK Power Offset	O		9.2.2.26a	For FDD only
HS-SCCH Power Offset	O		9.2.2.19d	For FDD only
HS-SCCH Code Change Grant	O		9.2.1.30S	
TDD ACK NACK Power Offset	O		9.2.3.7I	For TDD only

Range bound	Explanation
<i>maxnoofMACdFlows</i>	Maximum number of MAC-d flows.
<i>maxnoofPrioQueues</i>	Maximum number of Priority Queues.
<i>maxnoofMACdPDUindexes</i>	Maximum number of MAC-d PDU Size Indexes (SIDs).

### 9.2.1.30R HS-SCCH Code Change Indicator

The HS-SCCH Code Change Indicator indicates whether the HS-SCCH Code change is needed or not.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
HS-SCCH Code Change Indicator			ENUMERATED (HS-SCCH Code Change needed)	

### 9.2.1.30S HS-SCCH Code Change Grant

The *HS-SCCH Code Change Grant* IE indicates that modification of HS-SCCH Codes is granted.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
HS-SCCH Code Change Grant			ENUMERATED (Change Granted)	

### 9.2.1.30T IMEI

The IMEI is a permanent UE Equipment Identity, see ref. [1].

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
IMEI			OCTET STRING (SIZE (8))	<ul style="list-style-type: none"> <li>- hexadecimal digits 0 to F, two hexadecimal digits per octet,</li> <li>- each hexadecimal digit encoded 0000 to 1111,</li> <li>- 1111 used as filler for bits 8 to 5 of last octet</li> <li>- bit 4 to 1 of octet n encoding digit 2n-1</li> <li>- bit 8 to 5 of octet n encoding digit 2n</li> </ul> <p>Number of hexadecimal digits shall be 15.</p>

### 9.2.1.30U IMEISV

The IMEISV is a permanent UE Equipment Identity, see ref. [1].

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
IMEISV			OCTET STRING (SIZE (8))	<ul style="list-style-type: none"> <li>- hexadecimal digits 0 to F, two hexadecimal digits per octet,</li> <li>- each hexadecimal digit encoded 0000 to 1111,</li> <li>- 1111 used as filler for bits 8 to 5 of last octet</li> <li>- bit 4 to 1 of octet n encoding digit 2n-1</li> <li>- bit 8 to 5 of octet n encoding digit 2n</li> </ul> <p>Number of hexadecimal digits shall be 16.</p>

### 9.2.1.30V E-RNTI

The E-RNTI is needed for the UE (or UE group) specific CRC in E-AGCH, see ref. [50].

<u>IE/Group Name</u>	<u>Presence</u>	<u>Range</u>	<u>IE Type and Reference</u>	<u>Semantics Description</u>
<u>E-RNTI</u>			<u>INTEGER</u> <u>(0..65535)</u>	

### 9.2.1.30W E-DCH Physical Layer Category

The *E-DCH Physical Layer Category* IE defines a set of UE radio access capabilities related to E-DCH, as defined in [42].

Note: Coding is FFS.

### 9.2.1.31 IMSI

The IMSI is the permanent UE user Identity, see ref. [1].

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
IMSI			OCTET STRING (SIZE(3..8))	<ul style="list-style-type: none"> <li>-Decimal digits coded in BCD</li> <li>-'1111' used as filler</li> <li>-bit 4 to 1 of octet n is encoding digit 2n-1</li> <li>-bit 8 to 5 of octet n is encoding digit 2n</li> </ul>

### 9.2.1.31A Information Exchange ID

The Information Exchange ID uniquely identifies any requested information per RNS.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Information Exchange ID	M		INTEGER(0 .. 2 <sup>20</sup> -1)	

### 9.2.1.31B Information Exchange Object Type

Void.

### 9.2.1.31C Information Report Characteristics

The information report characteristics define how the reporting shall be performed.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
CHOICE <i>Information Report Characteristics Type</i>	M			
> <i>On Demand</i>			NULL	
> <i>Periodic</i>				
>>CHOICE <i>Information Report Periodicity Scale</i>	M			The frequency with which the Node B shall send information reports.
>>> <i>minute</i>				
>>>>Report Periodicity Value	M		INTEGER (1..60,...)	
>>> <i>hour</i>				
>>>>Report Periodicity Value	M		INTEGER (1..24,...)	
> <i>On Modification</i>				
>>Information Threshold	O		9.2.1.31D	

### 9.2.1.31D Information Threshold

The Information Threshold indicates which kind of information shall trigger the Information Reporting procedure.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
CHOICE <i>Information Type Item</i>	M				-	
> <i>DGPS Corrections</i>					-	
>>PRC Deviation	M		ENUMERATED(1, 2, 5, 10, ...)	PRC deviation in meters from the previously reported value, which shall trigger a report	-	

### 9.2.1.31E Information Type

The Information Type indicates which kind of information the RNS shall provide.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Information Type Item	M		ENUMERATED (UTRAN Access Point Position with Altitude, UTRAN Access Point Position, IPDL Parameters, GPS Information, DGPS Corrections, GPS RX Pos, SFN-SFN Measurement Reference Point Position, ..., Cell Capacity Class, NACC Related Data)	For information exchange on the lur-g interface, only the Cell Capacity Class is used.
<b>GPS Information</b>	C-GPS	1..<maxnoofGPSTypes>		
>GPS Information Item			ENUMERATED (GPS Navigation Model and Time Recovery, GPS Ionospheric Model, GPS UTC Model, GPS Almanac, GPS Real-Time Integrity, ...)	

Condition	Explanation
GPS	This IE shall be present if the <i>Information Type Item</i> IE indicates "GPS Information".

Range Bound	Explanation
<i>maxnoofGPSTypes</i>	Maximum number of GPS Information Types supported in one Information Exchange.

## 9.2.1.31F IPDL Parameters

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
CHOICE <i>IPDL Parameters</i>					-	
> <i>IPDL FDD Parameters</i>					-	
>> <i>IPDL FDD parameters</i>	M		9.2.2.21B		-	
> <i>IPDL TDD Parameters</i>				Applicable to 3.84Mcps TDD only	-	
>> <i>IPDL TDD parameters</i>	M		9.2.3.4B		-	
> <i>Additional IPDL Parameters</i>					-	
>> <i>IPDL TDD Parameters LCR</i>				Applicable to 1.28Mcps TDD only	-	
>>> <i>IPDL TDD parameters LCR</i>	M		9.2.3.4Bb		YES	reject

## 9.2.1.32 L3 Information

This parameter contains the Layer 3 Information from a Uu message as received from the UE over the Uu interface or the Layer 3 Information for a Uu message to be sent to a UE by the DRNC, as defined in ref. [16].

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
L3 Information			BIT STRING	The content is defined in ref. [16]

## 9.2.1.33 Limited Power Increase

Void.

## 9.2.1.33A Load Value

The *Load Value* IE contains the total load on the measured object relative to the maximum planned load for both the uplink and downlink. It is defined as the load percentage of the Cell Capacity Class.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Uplink Load Value	M		INTEGER(0..100)	Value 0 shall indicate the minimum load, and 100 shall indicate the maximum load. Load should be measured on a linear scale.
Downlink Load Value	M		INTEGER(0..100)	Value 0 shall indicate the minimum load, and 100 shall indicate the maximum load. Load should be measured on a linear scale.

## 9.2.1.34 MAC-c/sh SDU Length

Indicates the MAC-c/sh SDU Length. Which is used for FACH, DSCH and USCH. There may be multiple MAC-c/sh SDU Lengths per priority class.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
MAC-c/sh SDU Length			INTEGER(1..5000)	Size of the MAC-c/sh SDU in number of bits.

### 9.2.1.34A MAC-d PDU Size

The *MAC-d PDU Size* IE provides the size in bits of the MAC-d PDU.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
MAC-d PDU Size			INTEGER (1..5000,...)	

### 9.2.1.34Aa MAC-hs Guaranteed Bit Rate

The *MAC-hs Guaranteed Bit Rate* IE indicates the guaranteed number of bits per second that Node B should deliver over the air interface under normal operating conditions (provided there is data to deliver).

IE/Group Name	Presence	Range	IE type and reference	Semantics description
MAC-hs Guaranteed Bit Rate			INTEGER (0..2 <sup>24</sup> -1, ...)	Unit: bit/s

### 9.2.1.34Ab MAC-hs Reordering Buffer Size for RLC-UM

The *MAC-hs Reordering Buffer Size for RLC-UM* IE indicates the portion of the buffer in the UE that can be used for RLC-UM traffic (i.e. for Priority Queues whose *RLC Mode* IE is set to "RLC-UM").

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
MAC-hs Reordering Buffer Size for RLC-UM			INTEGER (0..300,...)	Unit: kBytes And N kBytes = N*1024 Bytes. The D R N S shall use this value to avoid the overflow of the UE buffer.

### 9.2.1.34B MAC-hs Reset Indicator

The *MAC-hs Reset Indicator* IE indicates that a reset of the MAC-hs is not required.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
MAC-hs Reset Indicator			ENUMERATED (MAC-hs Not Reset)	

### 9.2.1.34C MAC-hs Window Size

The *MAC-hs Window Size* IE is used for MAC-hs PDU retransmission as defined in [41].

IE/Group Name	Presence	Range	IE type and reference	Semantics description
MAC-hs Window Size			ENUMERATED (4, 6, 8, 12, 16, 24, 32,...)	

### 9.2.1.35 Maximum Allowed UL Tx Power

Maximum Allowed UL Tx Power is the maximum power that a UE in a particular cell is allowed to transmit.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Maximum Allowed UL Tx Power			INTEGER(-50..+33)	dBm

### 9.2.1.35A Measurement Availability Indicator

Void

### 9.2.1.35B Measurement Change Time

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Measurement Change Time	M		INTEGER (1..6000,...)	Unit: ms Range: 10..60000 ms Step: 10 ms

### 9.2.1.36 Measurement Filter Coefficient

The Measurement Filter Coefficient determines the amount of filtering to be applied for measurements.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Measurement Filter Coefficient			ENUMERATED(0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 11, 13, 15, 17, 19,...)	

### 9.2.1.36A Measurement Hysteresis Time

The Measurement Hysteresis Time provides the duration during which a reporting criterion has to be fulfilled for the Measurement Reporting procedure to be triggered.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Measurement Hysteresis Time			INTEGER (1..6000,...)	Unit: ms Range: 10..60000 ms Step: 10 ms

### 9.2.1.37 Measurement ID

The Measurement ID uniquely identifies a dedicated measurement within a UE Context or a common measurement within a Distant RNC Context [TDD – or a UE measurement within a UE Context].

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Measurement ID			INTEGER(0 .. 2 <sup>20</sup> -1)	

### 9.2.1.38 Measurement Increase/Decrease Threshold

The Measurement Increase/Decrease Threshold defines the threshold that shall trigger Event C or D.



IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
CHOICE <i>Measurement Increase/Decrease Threshold</i>	M				-	
> <i>SIR</i>					-	
>> <i>SIR</i>	M		INTEGER(0..62)	0: 0 dB 1: 0.5 dB 2: 1 dB ... 62: 31dB	-	
> <i>SIR Error</i>				FDD Only	-	
>> <i>SIR Error</i>	M		INTEGER(0..124 )	0: 0 dB 1: 0.5 dB 2: 1 dB ... 124: 62 dB	-	
> <i>Transmitted Code Power</i>					-	
>> <i>Transmitted Code Power</i>	M		INTEGER(0..112 ,...)	0: 0 dB 1: 0.5 dB 2: 1 dB ... 112: 56 dB	-	
> <i>RSCP</i>				TDD Only	-	
>> <i>RSCP</i>	M		INTEGER(0..126 )	0: 0 dB 1: 0.5 dB 2: 1 dB ... 126: 63 dB	-	
> <i>Round Trip Time</i>				FDD Only	-	
>> <i>Round Trip Time</i>	M		INTEGER(0..32766)	0: 0 chips 1: 0.0625 chips 2: 0.1250 chips ... 32766: 2047.875 chips	-	
> <i>Additional Measurement Thresholds</i>					-	
>> <i>Load</i>					-	
>>> <i>Load</i>	M		INTEGER(0..100 )	Units are the same as for the <i>Uplink Load Value</i> IE and <i>Downlink Load Value</i> IE.	-	
>> <i>Transmitted Carrier Power</i>					-	
>>> <i>Transmitted Carrier Power</i>	M		INTEGER(0..100 )	According to mapping in [23] and [24].	YES	reject
>> <i>Received Total Wide Band Power</i>					-	
>>> <i>Received Total Wide Band Power</i>	M		INTEGER(0..620 )	0: 0dB 1: 0.1dB 2: 0.2dB ... 620: 62dB	YES	reject
>> <i>UL Timeslot ISCP</i>				TDD Only	-	
>>> <i>UL Timeslot ISCP</i>			INTEGER(0..126 )	0: 0dB 1: 0.5dB 2: 1dB ... 126: 63dB	YES	reject
>> <i>RT Load</i>					-	
>>> <i>RT Load</i>	M		INTEGER(0..100 )	Units are the same as for the <i>Uplink RT</i>	YES	reject

				<i>Load Value IE and Downlink RT Load Value IE.</i>		
>>NRT Load Information					-	
>>>NRT Load Information	M		INTEGER(0..3)		YES	reject
>>UpPTS interference				1.28Mcps TDD Only	-	
>>>UpPTS interference Value	M		INTEGER (0..127,...)	According to mapping in [24]	YES	reject

### 9.2.1.38A Measurement Recovery Behavior

This IE controls the Measurement Recovery Behavior.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Measurement Recovery Behavior			NULL	

### 9.2.1.38B Measurement Recovery Reporting Indicator

This IE indicates the Measurement Recovery Reporting.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Measurement Recovery Reporting Indicator			NULL	

### 9.2.1.38C Measurement Recovery Support Indicator

This IE indicates the Measurement Recovery Support.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Measurement Recovery Support Indicator			NULL	

### 9.2.1.39 Measurement Threshold

The Measurement Threshold defines which threshold that shall trigger Event A, B, E, F or On Modification.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
CHOICE <i>Measurement Threshold</i>					-	
> <i>SIR</i>					-	
>> <i>SIR</i>	M		INTEGER(0..63)	According to mapping in ref. [23] and [24].	-	
> <i>SIR Error</i>				FDD Only	-	
>> <i>SIR Error</i>	M		INTEGER(0..125)	According to mapping in [23]	-	
> <i>Transmitted Carrier Power</i>					-	
>> <i>Transmitted Code Power</i>	M		INTEGER(0..127)	According to mapping in ref. [23] and [24].	-	
> <i>RSCP</i>				TDD Only	-	
>> <i>RSCP</i>	M		INTEGER(0..127)	According to mapping in ref. [24]	-	
> <i>Rx Timing Deviation</i>				Applicable to 3.84Mcps TDD Only	-	
>> <i>Rx Timing Deviation</i>	M		INTEGER(0..8191)	According to mapping in [24]	-	
> <i>Round Trip Time</i>				FDD Only	-	
>> <i>Round Trip Time</i>	M		INTEGER(0..32767)	According to mapping in [23]	-	
> <i>Additional Measurement Thresholds</i>					-	
>> <i>T<sub>UTRAN-GPS</sub> Measurement Threshold Information</i>					-	
>>> <i>T<sub>UTRAN-GPS</sub> Measurement Threshold Information</i>	M		9.2.1.59C		YES	reject
>> <i>SFN-SFN Measurement Threshold Information</i>					-	
>>> <i>SFN-SFN Measurement Threshold Information</i>	M		9.2.1.52B		YES	reject
>> <i>Load</i>					-	
>>> <i>Load</i>	M		INTEGER(0..100)	0 is the minimum indicated load, and 100 is the maximum indicated load.	YES	reject
>> <i>Transmitted Carrier Power</i>					-	
>>> <i>Transmitted Carrier Power</i>	M		INTEGER(0..100)	According to mapping in [23] and [24].	YES	reject
>> <i>Received Total Wide Band Power</i>					-	
>>> <i>Received Total Wide Band Power</i>	M		INTEGER(0..621)	According to mapping in [23] and [24].	YES	reject
>> <i>UL Timeslot ISCP</i>				TDD Only	-	
>>> <i>UL Timeslot ISCP</i>	M		INTEGER(0..127)	According to mapping in [24]	YES	reject
>> <i>RT Load</i>					-	
>>> <i>RT Load</i>	M		INTEGER(0..100)		YES	reject
>> <i>NRT Load Information</i>					-	

>>>NRT Load Information	M		INTEGER(0..3)		YES	reject
>>Rx Timing Deviation LCR				Applicable to 1.28Mcps TDD Only		
>>>Rx Timing Deviation LCR	M		INTEGER(0..511)	According to mapping in [24]	YES	reject
>>HS-SICH reception quality				Applicable to TDD Only	-	
>>>HS-SICH reception quality	M		INTEGER (0..20)	According to mapping in [24]	YES	reject
>>UpPTS interference				1.28Mcps TDD Only	-	
>>>UpPTS interference Value	M		INTEGER (0..127,...)	According to mapping in [24]	YES	reject

### 9.2.1.39A Message Structure

The *Message Structure IE* gives information for each level with assigned criticality in an hierarchical message structure from top level down to the lowest level above the reported level for the occurred error (reported in the *Information Element Criticality Diagnostics IE*).

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
<b>Message structure</b>		1..<maxnooflevels>		The first repetition of the <i>Message Structure IE</i> corresponds to the top level of the message. The last repetition of the <i>Message Structure IE</i> corresponds to the level above the reported level for the occurred error of the message.	-	
>IE ID	M		INTEGER(0..65535)	The IE ID of this level's IE containing the not understood or missing IE.	-	
>Repetition Number	O		INTEGER(1..256)	The <i>Repetition Number IE</i> gives, if applicable, the number of occurrences of this level's reported IE up to and including the occurrence containing the not understood or missing IE. Note: All the counted occurrences of the reported IE must have the same topdown hierarchical message structure of IEs with assigned criticality above them.	-	

Range bound	Explanation
maxnooflevels	Maximum no. of message levels to report. The value for maxnooflevels is 256.

#### 9.2.1.40 Message Type

The Message Type uniquely identifies the message being sent.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
<b>Procedure ID</b>		1		
>Procedure Code	M		INTEGER (0..255)	"0" = Common Transport Channel Resources Initialisation "1" = Common Transport Channel Resources Release "2" = Compressed Mode Command "3" = Downlink Power Control "4" = Downlink Power Timeslot Control "5" = Downlink Signalling Transfer "6" = Error Indication "7" = Dedicated Measurement Failure "8" = Dedicated Measurement Initiation "9" = Dedicated Measurement Reporting  "10" = Dedicated Measurement Termination "11" = Paging "12" = Physical Channel Reconfiguration "14" = Radio Link Addition "15" = Radio Link Deletion "16" = Radio Link Failure "17" = Radio Link Preemption "18" = Radio Link Restoration "19" = Radio Link Setup "20" = Relocation Commit "21" = Synchronised Radio Link Reconfiguration Cancellation "22" = Synchronised Radio Link Reconfiguration Commit "23" = Synchronised Radio Link Reconfiguration Preparation "24" = UnSynchronised Radio Link Reconfiguration "25" = Uplink Signalling Transfer "26" = Common Measurement Failure "27" = Common Measurement Initiation  "28" = Common Measurement Reporting "29" = Common Measurement Termination "30" = Information Exchange Failure "31" = Information Exchange Initiation "32" = Information Reporting "33" = Information Exchange Termination "34" = Radio Link Congestion "35" = Reset "36" = Radio Link Activation "38" = Radio Link Parameter Update "39" = UE Measurement Failure "40" = UE Measurement Initiation "41" = UE Measurement Reporting "42" = UE Measurement Termination
>Ddmode	M		ENUMERATED(FDD, TDD, Common, ...)	Common = common to FDD and TDD.
Type of Message	M		ENUMERATED(Initiating Message, Successful Outcome, Unsuccessful Outcome, Outcome)	

### 9.2.1.41 Multiple URAs Indicator

The Multiple URAs Indicator indicates whether the accessed cell has multiple URAs.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Multiple URAs Indicator			ENUMERATED(Multiple URAs exist, Single URA Exists)	

### 9.2.1.41a NACC Related Data

The *NACC related data* IE provides NACC related information for the indicated GSM cell.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
CHOICE GERAN System Info Type	M			
>SI				
>>SI	M		9.2.1.30Fc	GERAN system information SI3, SI13, SI1 [47]
>PSI				
>>PSI	M		9.2.1.30Fc	GERAN system information PSI1, PSI2, PSI4 [47]

### 9.2.1.41A Neighbouring UMTS Cell Information

The *Neighbouring UMTS Cell Information* IE provides information for UMTS Cells that are neighbouring cells to a cell in the DRNC. The neighbouring cell information is provided for each RNC (including the DRNC) that has cells that are neighbouring cells to the cell in the DRNC.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
<b>Neighbouring UMTS Cell Information</b>		1..<maxnoofneighbouringRNCs>			EACH	ignore
>RNC-ID	M		9.2.1.50		–	
>CN PS Domain Identifier	O		9.2.1.12		–	
>CN CS Domain Identifier	O		9.2.1.11		–	
>Neighbouring FDD Cell Information	O		9.2.1.41B		–	
>Neighbouring TDD Cell Information	O		9.2.1.41D		–	
>Neighbouring TDD Cell Information LCR	O		9.2.1.72		YES	ignore

Range bound	Explanation
<i>maxnoofneighbouringRNCs</i>	Maximum number of neighbouring RNCs.

### 9.2.1.41B Neighbouring FDD Cell Information

The *Neighbouring FDD Cell Information* IE provides information for FDD cells that are a neighbouring cells to a cell in the DRNC.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
<b>Neighbouring FDD Cell Information</b>		<i>1..&lt;max noofFDD neighbours&gt;</i>			–	
>C-ID	M		9.2.1.6		–	
>UL UARFCN	M		UARFCN 9.2.1.66	Corresponds to Nu in ref. [6]	–	
>DL UARFCN	M		UARFCN 9.2.1.66	Corresponds to Nd in ref. [6]	–	
>Frame Offset	O		9.2.1.30		–	
>Primary Scrambling Code	M		9.2.1.45		–	
>Primary CPICH Power	O		9.2.1.44		–	
>Cell Individual Offset	O		9.2.1.7		–	
>Tx Diversity Indicator	M		9.2.2.50		–	
>STTD Support Indicator	O		9.2.2.45		–	
>Closed Loop Mode1 Support Indicator	O		9.2.2.2		–	
>Closed Loop Mode2 Support Indicator	O		9.2.2.3		–	
>Restriction State Indicator	O		9.2.1.48C		YES	ignore
>DPC Mode Change Support Indicator	O		9.2.2.56		YES	ignore
>Coverage Indicator	O		9.2.1.12G		YES	ignore
>Antenna Co-location Indicator	O		9.2.1.2C		YES	ignore
>HCS Prio	O		9.2.1.30N		YES	ignore
>Cell Capability Container FDD	O		9.2.2.D		YES	ignore
>SNA Information	O		9.2.1.52Ca		YES	ignore

Range bound	Explanation
<i>maxnoofFDDneighbours</i>	Maximum number of neighbouring FDD cell for one cell.

### 9.2.1.41C Neighbouring GSM Cell Information

The *Neighbouring GSM Cell Information* IE provides information for all GSM Cells that are a neighbouring cell to a cell in the DRNC.



IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Neighbouring GSM Cell Information		1..<max noofGS Mneighbours>			GLOBAL	ignore
>CGI		1		Cell Global Identity as defined in ref. [1].	–	
>>LAI		1			–	
>>>PLMN Identity	M		OCTET STRING (3)	- digits 0 to 9, two digits per octet, - each digit encoded 0000 to 1001, - 1111 used as filler - bit 4 to 1 of octet n encoding digit 2n-1 - bit 8 to 5 of octet n encoding digit 2n -The PLMN Identity consists of 3 digits from MCC followed by either -a filler plus 2 digits from MNC (in case of 2 digit MNC) or -3 digits from MNC (in case of a 3 digit MNC).	–	
>>>LAC	M		OCTET STRING (2)	0000 and FFFE not allowed	–	
>>CI	M		OCTET STRING (2)		–	
>Cell Individual Offset	O		9.2.1.7	The Cell Individual Offset to be used for UEs using DCHs. If the <i>Extended GSM Cell Individual Offset</i> IE is present, the <i>Cell Individual Offset</i> IE shall be set to a) –10dB if the <i>Extended GSM Cell Individual Offset</i> IE is < -10dB and b) 10dB if the <i>Extended GSM Cell Individual Offset</i> IE is > 10dB.	–	
>BSIC		1		Base Station Identity Code as defined in ref. [1].	–	
>>NCC	M		BIT STRING(3)	Network Colour Code.	–	
>>BCC	M		BIT STRING(3)	Base Station Colour Code.	–	
>Band Indicator	M		ENUMERATED(DCS 1800 band, PCS 1900 band, ...)	Indicates whether or not the BCCH ARFCN belongs to the 1800 band or 1900 band of GSM frequencies.	–	
>BCCH ARFCN	M		INTEGER(0..1023)	BCCH Frequency as defined in ref. [29].	–	
>Coverage Indicator	O		9.2.1.12G		YES	ignore
>Antenna Co-location Indicator	O		9.2.1.2C		YES	ignore
>HCS Prio	O		9.2.1.30N		YES	ignore
> SNA Information	O		9.2.1.52Ca		YES	ignore

>GERAN Cell Capability	O		9.2.1.30Fa		YES	ignore
>GERAN Classmark	O		9.2.1.30Fb		YES	ignore
>Extended GSM Cell Individual Offset	O		9.2.1.26Bb	The Extended GSM Cell Individual Offset to be used for UEs using DCHs, for values that exceed the range of the <i>Cell Individual Offset</i> IE.	YES	ignore

Range bound	Explanation
<i>maxnoofGSMneighbours</i>	Maximum number of neighbouring GSM cells for one cell.

### 9.2.1.41D Neighbouring TDD Cell Information

The *Neighbouring TDD Cell Information* IE provides information for 3.84Mcps TDD cells that are a neighbouring cells to a cell in the DRNC.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
<b>Neighbouring TDD Cell Information</b>		<i>1..&lt;maxnoofTDDneighbours&gt;</i>			–	
>C-ID	M		9.2.1.6		–	
>UARFCN	M		9.2.1.66	Corresponds to Nt in ref. [7]	–	
>Frame Offset	O		9.2.1.30		–	
>Cell Parameter ID	M		9.2.1.8		–	
>Sync Case	M		9.2.1.54		–	
>Time Slot For SCH	C-Case1		Time Slot 9.2.1.56		–	
>SCH Time Slot	C-Case2		9.2.1.51		–	
>SCTD Indicator	M		9.2.1.78		–	
>Cell Individual Offset	O		9.2.1.7		–	
>DPCH Constant Value	O		9.2.1.23		–	
>PCCPCH Power	O		9.2.1.43		–	
>Restriction State Indicator	O		9.2.1.48C		YES	ignore
>Coverage Indicator	O		9.2.1.12G		YES	ignore
>Antenna Co-location Indicator	O		9.2.1.2C		YES	ignore
>HCS Prio	O		9.2.1.30N		YES	ignore
>Cell Capability Container TDD	O		9.2.3.1a		YES	ignore
> SNA Information	O		9.2.1.52Ca		YES	ignore

Condition	Explanation
Case1	The IE shall be present if the <i>Sync Case</i> IE is set to “Case1”.
Case2	The IE shall be present if the <i>Sync Case</i> IE is set to “Case2”.

Range bound	Explanation
<i>maxnoofTDDneighbours</i>	Maximum number of neighbouring 3.84Mcps TDD cell for one cell.

### 9.2.1.41Dd Neighbouring TDD Cell Measurement Information LCR

This IE provides information on the 1.28Mcps TDD neighbouring cells used for the purpose of Measurements. Since the measurement can be performed on every time slot and midamble shift, the *Time slot LCR* IE and *Midamble shift LCR* IE shall be included if available.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
UTRAN Cell Identifier	M		9.2.1.71	
UARFCN	M		9.2.1.66	Corresponds to Nt [15]
Cell Parameter ID	M		9.2.1.8	
Time Slot LCR	O		9.2.3.12a	
Midamble shift LCR	O		9.2.3.4C	

### 9.2.1.41E Paging Cause

Cause for a CN originated page.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Paging Cause			ENUMERATED( Terminating Conversational Call, Terminating Streaming Call, Terminating Interactive Call, Terminating Background Call, Terminating Low Priority Signalling,... , Terminating High Priority Signalling, Terminating – cause unknown )	See in [16]

### 9.2.1.41F Paging Record Type

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Paging Record Type			ENUMERATED(IMSI (GSM-MAP), TMSI (GSM-MAP), P-TMSI (GSM-MAP), IMSI (DS-41), TMSI (DS-41),...)	See ref. [16]

### 9.2.1.41Fa Partial Reporting Indicator

This IE indicates if DRNS may report partially successful measurements.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Partial Reporting Indicator			ENUMERATED(partial reporting)	

			allowed)	
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### 9.2.1.41G Neighbouring FDD Cell Measurement Information

This IE provides information on the FDD neighbouring cells used for the purpose of Measurements.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
UTRAN Cell Identifier	M		9.2.1.71	
UARFCN	M		9.2.1.66	Corresponds to Nd [6]
Primary Scrambling Code	M		9.2.1.45	

### 9.2.1.41H Neighbouring TDD Cell Measurement Information

This IE provides information on the 3.84Mcps TDD neighbouring cells used for the purpose of Measurements. Since the measurement can be performed on every time slot and midamble shift, the *Time slot* IE and *Midamble shift and burst type* IE shall be included if available.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
UTRAN Cell Identifier	M		9.2.1.71	
UARFCN	M		9.2.1.66	Corresponds to Nt [15]
Cell Parameter ID	M		9.2.1.8	
Time slot	O		9.2.1.56	
Midamble Shift And Burst Type	O		9.2.3.4	

### 9.2.1.41I NRT Load Information Value

The *NRT Load Information* IE indicates the load situation on the cell for the Non Real-Time traffic. Non Real Time traffic corresponds to the Interactive and Background traffic classes.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Uplink NRT Load Information Value	M		INTEGER(0..3)	Mapping of the status: 0: low: The Uplink NRT load is low. 1: medium: The Uplink NRT load is medium. 2: high: Uplink NRT load is high. Probability to admit a new user is low. 3: overloaded: Uplink NRT overload. The probability to admit a new user is low, packets are discarded and the source is recommended to reduce the data flow.
Downlink NRT Load Information Value	M		INTEGER(0..3)	Mapping of the status: 0: low: The Downlink NRT load is low. 1: medium: The Downlink NRT load is medium. 2: high: Downlink NRT load is high. Probability to admit a new user is low. 3: overloaded: Downlink NRT overload. The probability to admit a new user is low, packets are discarded and the source is recommended to reduce the data flow.

#### 9.2.1.42 Payload CRC Present Indicator

This parameter indicates whether FP payload 16 bit CRC is used or not.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Payload CRC Presence Indicator			ENUMERATED(CRC Included, CRC not included)	

#### 9.2.1.43 PCCPCH Power

Primary CCPCH power is the power that shall be used for reference power value in a TDD cell. The reference point is the antenna connector. If Transmit Diversity is applied to the Primary CCPCH, the PCCPCH Power is the linear sum of the power that is used for transmitting the PCCPCH on all branches.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
PCCPCH Power			INTEGER (-150..400,...)	Unit dBm Range -15.0 to 40.0 dBm, Step size 0.1 dB. -15.0 shall indicate $P_{\leq} -15\text{dBm}$ +40.0 shall indicate $P_{\geq} 40\text{dBm}$ .

#### 9.2.1.44 Primary CPICH Power

Primary CPICH power is the power that is used for transmitting the Primary CPICH in a cell. The reference point is the antenna connector. If Transmit Diversity is applied to the Primary CPICH, the Primary CPICH Power is the linear sum of the power that is used for transmitting the Primary CPICH on all branches.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Primary CPICH Power			INTEGER (-100..500)	Value = Primary CPICH Power/10 Unit dBm Range -10.0..+50.0 Step 0.1 dB

### 9.2.1.45 Primary Scrambling Code

The Primary scrambling code to be used in the cell.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Primary Scrambling Code			INTEGER(0..511)	

### 9.2.1.45A Priority Queue ID

The *Priority Queue ID* IE provides the identity of the Priority Queue. The Priority Queue ID is unique across all MAC-d flows that are currently allocated for one UE Context.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Priority Queue ID			INTEGER (0..7)	

### 9.2.1.45B Process Memory Size

The *Process Memory Size* IE is the size of an HARQ process in the DRNS expressed in bits. It provides the maximum number of soft channel bits in the virtual IR buffer [9] or [46].

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Process Memory Size			ENUMERATED (800, 1600, 2400, 3200, 4000, 4800, 5600, 6400, 7200, 8000, 8800, 9600, 10400, 11200, 12000, 12800, 13600, 14400, 15200, 16000, 17600, 19200, 20800, 22400, 24000, 25600, 27200, 28800, 30400, 32000, 36000, 40000, 44000, 48000, 52000, 56000, 60000, 64000, 68000, 72000, 76000, 80000, 88000, 96000, 104000, 112000, 120000, 128000, 136000, 144000, 152000, 160000, 176000, 192000, 208000, 224000, 240000, 256000, 272000, 288000, 304000,...)	

### 9.2.1.45C E-DCH DDI Value

[The E-DCH DDI Value IE is the Data Description Indicator value identifying a unique combination of E-DCH MAC-d Flow ID and MAC-d PDU Size.](#)

<u>IE/Group Name</u>	<u>Presence</u>	<u>Range</u>	<u>IE Type and Reference</u>	<u>Semantics Description</u>
<u>E-DCH DDI Value</u>			<u>INTEGER (0..63)</u>	

### 9.2.1.46 Puncture Limit

The maximum amount of puncturing for a transport channel in rate matching.

<b>IE/Group Name</b>	<b>Presence</b>	<b>Range</b>	<b>IE Type and Reference</b>	<b>Semantics Description</b>
Puncture Limit			INTEGER (0..15)	0: 40% 1: 44 % ... 14: 96% 15: 100% (no puncturing)

### 9.2.1.46A QE-Selector

The QE-Selector indicates from which source the value for the quality estimate (QE) shall be taken.

<b>IE/Group Name</b>	<b>Presence</b>	<b>Range</b>	<b>IE Type and Reference</b>	<b>Semantics Description</b>
QE-Selector			ENUMERATED(selected, non-selected)	

### 9.2.1.47 RANAP Relocation Information

This parameter is transparent to the RNSAP. The parameter contains information for the Relocation procedure as defined in [2].

<b>IE/Group Name</b>	<b>Presence</b>	<b>Range</b>	<b>IE Type and Reference</b>	<b>Semantics Description</b>
RANAP Relocation Information			BIT STRING	The content is defined in ref. [2].

### 9.2.1.48 Report Characteristics

The Report Characteristics, defines how the reporting shall be performed.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
CHOICE <i>Report Characteristics</i>	M				–	
> <i>On Demand</i>			NULL		–	
> <i>Periodic</i>					–	
>>Report Periodicity	M		9.2.1.48a	The periodicity with which the DRNS shall send measurement reports.	–	
> <i>Event A</i>					–	
>>Measurement Threshold	M		9.2.1.39	The threshold for which the DRNS shall trigger a measurement report.	–	
>>Measurement Hysteresis Time	O		9.2.1.36A		–	
> <i>Event B</i>					–	
>>Measurement Threshold	M		9.2.1.39	The threshold for which the DRNS shall trigger a measurement report.	–	
>>Measurement Hysteresis Time	O		9.2.1.36A		–	
> <i>Event C</i>					–	
>>Measurement Increase/Decrease Threshold	M		9.2.1.38		–	
>>Measurement Change Time	M		9.2.1.35B	The time within which the measurement entity shall rise, in order to trigger a measurement report.	–	
> <i>Event D</i>					–	
>>Measurement Increase/Decrease Threshold	M		9.2.1.38		–	
>>Measurement Change Time	M		9.2.1.35B	The time within which the measurement entity shall fall, in order to trigger a measurement report.	–	
> <i>Event E</i>					–	
>>Measurement Threshold 1	M		Measurement Threshold 9.2.1.39		–	
>>Measurement Threshold 2	O		Measurement Threshold 9.2.1.39		–	



IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
>>Measurement Hysteresis Time	O		9.2.1.36A	The hysteresis time in ms	–	
>>Report Periodicity	O		9.2.1.48a	The periodicity with which the DRNS shall send measurement reports.	–	
>Event F					–	
>>Measurement Threshold 1	M		Measurement Threshold 9.2.1.39		–	
>>Measurement Threshold 2	O		Measurement Threshold 9.2.1.39		–	
>>Measurement Hysteresis Time	O		9.2.1.36A	The hysteresis time in ms	–	
>>Report Periodicity	O		9.2.1.48a	The periodicity with which the DRNS shall send measurement reports.	–	
>Additional Report Characteristics					–	
>> On Modification					–	
>>> On Modification		1			YES	reject
>>>>Measurement Threshold	M		9.2.1.39			

### 9.2.1.48a Report Periodicity

The Report Periodicity defines the frequency at which the Node B shall send measurement reports.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
CHOICE <i>Report Periodicity Scale</i>	M			
> <i>millisecond</i>				
>>Report Periodicity Value	M		INTEGER (1..6000,...)	Unit: ms Range: 10..60000 ms Step: 10 ms
> <i>minute</i>				
>>Report Periodicity Value	M		INTEGER (1..60,...)	Unit: min Range: 1..60 min Step: 1 min

### 9.2.1.48A Requested Data Value

The Requested Data Value contains the relevant data concerned the ongoing information exchange. *Requested Data Value* IE shall include at least one of the following IE.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
UTRAN Access Point Position with Altitude	O		9.2.1.75		-	
IPDL Parameters	O		9.2.1.31F		-	
DGPS Corrections	O		9.2.1.19B		-	
GPS Navigation Model and Time Recovery	O		9.2.1.30I		-	
GPS Ionospheric Model	O		9.2.1.30H		-	
GPS UTC Model	O		9.2.1.30L		-	
GPS Almanac	O		9.2.1.30G		-	
GPS Real-Time Integrity	O		9.2.1.30J		-	
GPS RX Pos	O		9.2.1.30K		-	
SFN-SFN Measurement Reference Point Position	O		9.2.1.74		-	
Cell Capacity Class Value	O		9.2.1.5C		YES	ignore
NACC Related Data	O		9.2.1.41a		YES	ignore

### 9.2.1.48B Requested Data Value Information

The *Requested Data Value Information* IE provides information on whether or not the Requested Data Value is available in the message and also the Requested Data Value itself if available. In case of "Periodic" and "On Modification" reporting, "Information Not Available" shall be used when at least one part of the requested information was not available at the moment of initiating the Information Reporting procedure.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
CHOICE <i>Information Availability Indicator</i>	M				-	
> <i>Information Available</i>					-	
>>Requested Data Value	M		9.2.1.48A		-	
> <i>Information not Available</i>			NULL		-	

### 9.2.1.48C Restriction State Indicator

The Restriction state indicator is the identifier indicates whether the cell is "Cell Reserved for Operator Use" or not. It is provided by DRNS and reported to SRNC.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Restriction state indicator			ENUMERATED (Cell Not Reserved for Operator Use, Cell Reserved for Operator Use, ...)	

### 9.2.1.48D RLC Mode

The *RLC Mode* IE indicates the RLC Mode used for a Priority Queue.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
RLC Mode			ENUMERATED (RLC-AM, RLC-UM,...)	

### 9.2.1.49 RL ID

The RL ID is the unique identifier for one RL associated with a UE.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
RL ID			INTEGER (0..31)	

### 9.2.1.49A RL Specific DCH Information

The *RL Specific DCH Information* IE provides RL Specific DCH Information for DCHs. In case of a set of co-ordinated DCHs requiring a new transport bearer on Iur, the *Transport Layer Address* IE and the *Binding ID* IE in the *RL Specific DCH Information* IE shall be included only for one of the DCHs in the set of co-ordinated DCHs.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
<b>RL Specific DCH Information</b>		<i>1..&lt;maxno of DCHs&gt;</i>			–	
>DCH ID	M		9.2.1.16		–	
>Binding ID	O		9.2.1.3	Shall be ignored if bearer establishment with ALCAP.	–	
>Transport Layer Address	O		9.2.1.62	Shall be ignored if bearer establishment with ALCAP.	–	

Range bound	Explanation
<i>maxnoofDCHs</i>	Maximum number of DCHs for one UE.

### 9.2.1.50 RNC-ID

This is the identifier of one RNC in UTRAN.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
RNC-ID			INTEGER(0..4095)	

### 9.2.1.50A SAT ID

The SAT ID indicates the identity of the satellite.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
SAT ID			INTEGER(0..63)	

### 9.2.1.50B RT Load Value

The *RT Load Value* IE indicates in percents the ratio of the load generated by Real Time traffic, relative to the measured Load Value. Real Time traffic corresponds to the Conversational and Streaming traffic classes.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Uplink RT Load Value	M		INTEGER(0..100)	
Downlink RT Load Value	M		INTEGER(0..100)	

### 9.2.1.51 SCH Time Slot

The *SCH Time Slot* IE represents the first time slot (k) of a pair of time slots inside a Radio Frame that is assigned to the Physical Channel SCH. The *SCH Time Slot* IE is only applicable if the value of *Sync Case* IE is Case 2 since in this case the SCH is allocated in TS#k and TS#k+8.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
SCH Time Slot			INTEGER(0..6)	

### 9.2.1.51A Scheduling Priority Indicator

Indicates the relative priority of the FACH, DSCH, USCH or HS-DSCH data frame. Used by the DRNC when scheduling FACH, DSCH, USCH or HS-DSCH traffic.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Scheduling Priority Indicator			INTEGER(0..15)	Relative priority of the FACH, DSCH, USCH or HS-DSCH data frame: 0=Lowest Priority ... 15=Highest Priority

### 9.2.1.52 Service Area Identifier (SAI)

This information element is used to identify an area consisting of one or more cells belonging to the same Location Area. Such an area is called a Service Area and can be used for indicating the location of a UE to the CN. For this protocol, only a Service Area that is defined to be applicable to the PS and CS domains shall be used.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
PLMN Identity	M		OCTET STRING (3)	- digits 0 to 9, two digits per octet, - each digit encoded 0000 to 1001, - 1111 used as filler - bit 4 to 1 of octet n encoding digit 2n-1 - bit 8 to 5 of octet n encoding digit 2n -The PLMN Identity consists of 3 digits from MCC followed by either -a filler plus 2 digits from MNC (in case of 2 digit MNC) or -3 digits from MNC (in case of a 3 digit MNC).
LAC	M		OCTET STRING (2)	0000 and FFFE not allowed
SAC	M		OCTET STRING (2)	

### 9.2.1.52A SFN

System Frame Number of the cell, see ref. [17].

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
SFN			INTEGER(0..4095)	

### 9.2.1.52B SFN-SFN Measurement Threshold Information

The SFN-SFN Measurement Threshold Information defines the related thresholds SFN-SFN Observed Time Difference measurements which shall trigger the Event On Modification.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
SFN-SFN Change Limit	O		INTEGER(1..256)	Change of SFN-SFN value compared to previously reported value, which shall trigger a new report. Unit in 1/16 chip.
Predicted SFN-SFN Deviation Limit	O		INTEGER(1..256)	Deviation the Predicted SFN-SFN from the latest measurement result, which shall trigger a new report. Unit in 1/16 chip.

### 9.2.1.52C SFN-SFN Measurement Value Information

The SFN-SFN Measurement Value Information IE indicates the measurement result related to SFN-SFN Observed Time Difference measurements as well as other related information.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
<b>Successful Neighbouring cell SFN-SFN Observed Time Difference Measurement Information</b>		<i>1..&lt;maxnoofMeasNCell&gt;</i>		
>UTRAN Cell Identifier	M		9.2.1.71	
>SFN-SFN Value	M		9.2.1.77	
>SFN-SFN Quality	O		INTEGER(0..255)	Indicates the standard deviation (std) of the SFN-SFN otd (observed time difference) measurements in 1/16 chip. SFN-SFN Quality = $\sqrt{E[(x-\mu)^2]}$ = std of reported SFN-SFN Value, where x is the reported SFN-SFN Value and $\mu = E[x]$ is the expectation value of x.
>SFN-SFN Drift Rate	M		INTEGER(-100..100)	Indicates the SFN-SFN drift rate in 1/256 chip per second. A positive value indicates that the Reference cell clock is running at a greater frequency than the measured neighbouring cell.
>SFN-SFN Drift Rate Quality	O		INTEGER(0..100)	Indicates the standard deviation (std) of the SFN-SFN drift rate measurements in 1/256 chip per second. SFN-SFN Drift Rate Quality = $\sqrt{E[(x-\mu)^2]}$ = std of reported SFN-SFN Drift Rate, where x is the reported SFN-SFN Drift Rate and $\mu = E[x]$ is the expectation value of x.
>SFN-SFN Measurement Time Stamp	M		9.2.1.76	
<b>Unsuccessful Neighbouring cell SFN-SFN Observed Time Difference Measurement Information</b>		<i>0..&lt;maxnoofMeasNCell-1&gt;</i>		
>UTRAN Cell Identifier	M		9.2.1.71	

Range bound	Explanation
<i>maxnoofMeasNCell</i>	Maximum number of neighbouring cells on which measurements can be performed.

### 9.2.1.52Ca Shared Network Area (SNA) Information

This information element contains a list of Shared Network Areas, identified by the Shared Network Area Code (SNAC, see [1]) which a certain cell belongs to. For a broader description of the SNA access control see [40].

IE/Group Name	Presence	Range	IE type and reference	Semantics description
PLMN Identity	M		OCTET STRING (3)	- digits 0 to 9, two digits per octet, - each digit encoded 0000 to 1001, - 1111 used as filler - bit 4 to 1 of octet n encoding digit 2n-1 - bit 8 to 5 of octet n encoding digit 2n -The PLMN Identity consists of 3 digits from MCC followed by either -a filler plus 2 digits from MNC (in case of 2 digit MNC) or -3 digits from MNC (in case of a 3 digit MNC).
<b>List of SNAs</b>		$0..<maxnoofSNAs >$		
> SNAC	M		INTEGER (0.. 65535)	

Range bound	Explanation
<i>maxnoofSNAs</i>	Maximum number of SNAs one cell can be part of.

### 9.2.1.52D SID

The *SID* IE provides the identity of the Size Index.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
SID			INTEGER (0..7)	

### 9.2.1.53 S-RNTI

The S-RNTI identifies the UE in the SRNC.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
S-RNTI			INTEGER(0.. $2^{20}-1$ )	

### 9.2.1.53a S-RNTI Group

The S-RNTI Group identifies a group of UEs in the SRNC.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
S-RNTI	M		9.2.1.53	
S-RNTI bit mask index	M		Enumerated(b1, b2,..b19,...)	

The S-RNTI group is identified by all S-RNTI values whose bits starting from the most significant bit down to, and including, the bit indicated by S-RNTI bit mask index, are equal to the corresponding bits of the S-RNTI in this IE.

The bits of the S-RNTI in this IE that are less significant than the bit position indicated by the S-RNTI bit mask index shall be ignored.

### 9.2.1.54 Sync Case

The SCH and PCCPCH in a TDD cell are mapped on one or two downlink slots per frame. There are two cases of Sync Case as follows:

- Case 1) SCH and PCCPCH allocated in a single TS#k
- Case 2) SCH allocated in two TS: TS#k and TS#k+8  
PCCPCH allocated in TS#k

[1.28Mcps TDD - There is no Sync Case indication needed for 1.28Mcps TDD. If the *Sync Case* IE must be included in a message from DRNC to SRNC used for 1.28Mcps TDD, the DRNC shall indicate Sync Case 1 and the SRNC shall ignore it.]

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Sync Case			INTEGER (1..2,...)	

### 9.2.1.54A T1

The *T1* IE is used as described in ref [41] subclause 11.6.2.3.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
T1			ENUMERATED (10, 20, 30, 40, 50, 60, 70, 80, 90, 100, 120, 140, 160, 200, 300, 400, ...)	Unit: ms Node B may use this value to stop the re-transmission of the corresponding MAC-hs PDU.

### 9.2.1.55 TFCI Presence

The TFCI Presence parameter indicates whether the TFCI shall be included. [TDD - If it is present in the timeslot, it will be mapped to the channelisation code defined by [12].]

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
TFCI Presence			ENUMERATED (Present, not present)	

### 9.2.1.56 Time Slot

The Time Slot represents the time interval assigned to a Physical Channel referred to the start of a Radio Frame.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Time Slot			INTEGER (0..14)	

### 9.2.1.56A TNL QoS

This IE indicates the TNL QoS characteristics of the transport bearer for the uplink data traffic.

When the *DS field* IE is used, the value of this IE is configurable by the operator.



When the *Generic Traffic Category* IE is used, generic traffic categories are implementation-specific (e.g. they may be determined by the sender from the application parameters). The value assigned to each of these categories and sent in the *Generic Traffic Category* IE is configurable by the operator, as well as the mapping of this value to DS field [44] at the DRNS side.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
CHOICE <i>TNL QoS type</i>	M			
> <i>DS Field</i>				
>>DS field	M		BIT STRING (8)	DS field as defined in [44]. Typically used when the DRNS and its SRNC are in the same DS domain as defined in [45].
> <i>Generic Traffic Category</i>				
>>Generic Traffic Category	M		BIT STRING (8)	

### 9.2.1.57 ToAWE

ToAWE is the window endpoint. DL data frames are expected to be received before this window endpoint. ToAWE is defined with a positive value relative Latest Time of Arrival (LT<sub>oA</sub>). A data frame arriving after ToAWE gives a Timing Adjustment Control frame response.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
ToAWE			INTEGER (0..2559)	Unit: msec.

### 9.2.1.58 ToAWS

ToAWS is the window startpoint. DL data frames are expected to be received after this window startpoint. ToAWS is defined with a positive value relative Time of Arrival Window Endpoint (ToAWE). A data frame arriving before ToAWS gives a Timing Adjustment Control frame response.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
ToAWS			INTEGER (0..1279)	Unit: msec.

### 9.2.1.58a Trace Depth

The *Trace Depth* IE is Trace Configuration Parameter what should be traced by the DRNC on the indicated interfaces.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Trace Depth			ENUMERATED ( Minimum, Medium, Maximum,...)	Meaning of this parameter is described in [49]

### 9.2.1.58b Trace Recording Session Reference

The *Trace Recording Session Reference* IE provides a Trace Recording Session Reference allocated by the triggering entity.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Trace Recording Session Reference			INTEGER (0..65535)	

### 9.2.1.58c Trace Reference

The *Trace Reference* IE provides a Trace Reference allocated by the triggering entity.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Trace Reference			OCTET STRING (SIZE(2..3))	

### 9.2.1.58A Traffic Class

This IE indicates the type of application the Radio Bearer is optimised for.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Traffic Class			ENUMERATED (conversational, streaming, interactive, background, ...)	

### 9.2.1.59 Transaction ID

The Transaction ID is used to associate all the messages belonging to the same procedure. Messages belonging to the same procedure shall use the same Transaction ID.

The Transaction ID is determined by the initiating peer of a procedure.

For procedures addressed to a specific UE Context, the Transaction ID shall uniquely identify a procedure among all ongoing parallel procedures for the same UE using the same procedure code, and initiated by the same protocol peer.

For procedures not addressed to a specific UE Context, the Transaction ID shall uniquely identify a procedure among all ongoing parallel procedures using the same procedure code, and initiated by the same protocol peer.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
CHOICE <i>Transaction ID Length</i>				The Transaction ID shall be interpreted for its integer value, not for the type of encoding ("short" or "long").
> <i>Short</i>				
>>Transaction ID Value	M		INTEGER (0..127)	
> <i>Long</i>				
>>Transaction ID Value	M		INTEGER (0..32767)	

### 9.2.1.59A Transmitted Carrier Power

The *Transmitted Carrier Power* IE contains the Transmitted Carrier Power in a cell, as defined in [11] & [14].

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Transmitted Carrier Power			INTEGER(0..100)	According to mapping in [23] and [24].

9.2.1.59B  $T_{\text{UTRAN-GPS}}$  Accuracy Class

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
$T_{\text{UTRAN-GPS}}$ Accuracy Class			ENUMERATED(Accuracy Class A, Accuracy Class B, Accuracy Class C,...)	More information about Measurement Accuracy Class is included in [23].

9.2.1.59C  $T_{\text{UTRAN-GPS}}$  Measurement Threshold Information

The  $T_{\text{UTRAN-GPS}}$  Measurement Threshold Information defines the related thresholds for UTRAN GPS Timing of Cell Frames for UE Positioning measurements shall trigger the Event On Modification.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
$T_{\text{UTRAN-GPS}}$ Change Limit	O		INTEGER(1..256)	Change of $T_{\text{UTRAN-GPS}}$ value compared to previously reported value, which shall trigger a new report. Unit in 1/16 chip.
Predicted $T_{\text{UTRAN-GPS}}$ Deviation Limit	O		INTEGER(1..256)	Deviation of the Predicted $T_{\text{UTRAN-GPS}}$ from the latest measurement result, which shall trigger a new report. Unit in 1/16 chip.

9.2.1.59D  $T_{\text{UTRAN-GPS}}$  Measurement Value Information

The  $T_{\text{UTRAN-GPS}}$  *Measurement Value Information* IE indicates the measurement results related to the UTRAN GPS Timing of Cell Frames for UE Positioning measurements.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
T <sub>UTRAN-GPS</sub>		1		Indicates the UTRAN GPS Timing of Cell Frames for UE Positioning. According to mapping in [23] and [24]; significant values range from 0 to 37158911999999.
>MS	M		INTEGER (0..16383)	Most Significant Part
>LS	M		INTEGER (0..4294967295)	Least Significant Part
T <sub>UTRAN-GPS</sub> Quality	O		INTEGER(0..255)	Indicates the standard deviation (std) of the T <sub>UTRAN-GPS</sub> measurements in 1/16 chip. $T_{UTRAN-GPS} \text{ Quality} = \sqrt{E[(x-\mu)^2]}$ = std of reported T <sub>UTRAN-GPS</sub> Value, where x is the reported T <sub>UTRAN-GPS</sub> Value and $\mu = E[x]$ is the expectation value of x.
T <sub>UTRAN-GPS</sub> Drift Rate	M		INTEGER(-50..50)	Indicates the T <sub>UTRAN-GPS</sub> drift rate in 1/256 chip per second. A positive value indicates that the UTRAN clock is running at a lower frequency than GPS clock.
T <sub>UTRAN-GPS</sub> Drift Rate Quality	O		INTEGER(0..50)	Indicates the standard deviation (std) of the T <sub>UTRAN-GPS</sub> drift rate measurements in 1/256 chip per second. $T_{UTRAN-GPS} \text{ Drift Rate Quality} = \sqrt{E[(x-\mu)^2]}$ = std of reported T <sub>UTRAN-GPS</sub> Drift Rate, where x is the reported T <sub>UTRAN-GPS</sub> Drift Rate and $\mu = E[x]$ is the expectation value of x.

### 9.2.1.60 Transport Bearer ID

The Transport Bearer ID uniquely identifies an Iur transport bearer.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Transport Bearer ID			INTEGER(0..4095)	

### 9.2.1.61 Transport Bearer Request Indicator

Indicates whether a new Iur transport bearer needs to be established for carrying the corresponding data stream(s), or whether an existing transport bearer will be used.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Transport Bearer Request Indicator			ENUMERATED(Bearer Requested, Bearer not Requested, ...)	

### 9.2.1.62 Transport Layer Address

In case of transport bearer establishment with ALCAP [3] [35], this IE contains the address to be used for Transport Network Control Plane signalling to establish the transport bearer according to [3] [35].

In order to allow transport bearer establishment without ALCAP, this IE contains the address of the transport bearer to be used for the user plane transport.

For details on the Transport Address used see [3].

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Transport Layer Address			BIT STRING(1..160, ...)	

### 9.2.1.63 Transport Format Combination Set (TFCS)

The Transport Format Combination Set is defined as a set of Transport Format Combinations on a Coded Composite Transport Channel. It is the allowed Transport Format Combinations of the corresponding Transport Channels. The DL Transport Format Combination Set is applicable to DL Transport Channels.

[FDD - Where the UE is assigned access to one or more DSCH transport channels then the UTRAN has the choice of two methods for signalling the mapping between TFCI(field 2) values and the corresponding TFC:

#### Method #1 - TFCI range

The mapping is described in terms of a number of groups, each group corresponding to a given transport format combination (value of CTFC(field2)). The CTFC(field2) value specified in the first group applies for all values of TFCI(field 2) between 0 and the specified 'Max TFCI(field2) value'. The CTFC(field2) value specified in the second group applies for all values of TFCI(field 2) between the 'Max TFCI(field2) value' specified in the last group plus one and the specified 'Max TFCI(field2) value' in the second group. The process continues in the same way for the following groups with the TFCI(field 2) value used by the UE in constructing its mapping table starting at the largest value reached in the previous group plus one.

#### Method #2 - Explicit

The mapping between TFCI(field 2) value and CTFC(field2) is spelt out explicitly for each value of TFCI (field2).

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
<b>CHOICE DSCH</b>	M			
>No Split in the TFCI				This choice is made if: a) The TFCS refers to the uplink OR b) The mode is FDD and none of the Radio Links of the concerned UE are assigned any DSCH transport channels OR c) The mode is TDD
>>TFCS		1..<maxnoofTFCs>		The first instance of the parameter corresponds to TFCI zero, the second to 1 and so on. [TDD - The first entry (for TFCI 0) should be ignored by the receiver.]
>>>CTFC	M		9.2.1.14A	
>>>CHOICE Gain Factors	C-PhysChan			
>>>>Signalled Gain Factors				
>>>>>Gain Factor $\beta_C$	M		INTEGER(0..15)	[FDD - For UL DPCCCH or control part of PRACH ref. [21].] [TDD - $\beta$ for UL DPCH mapping in accordance to [13].]
>>>>>Gain Factor $\beta_D$	M		INTEGER(0..15)	[FDD - For UL DPDCCH or data part of PRACH ref. [21].] [TDD - Should be set to 0 by the sender, and shall be ignored by the receiver.]
>>>>>Reference TFC nr	O		INTEGER(0..15)	If this TFC is a reference TFC, this IE indicates the reference number
>>>>>Computed Gain Factors				
>>>>>Reference TFC nr	M		INTEGER(0..15)	Indicates the reference TFC to be used to calculate the gain factors for this TFC
>There is a split in the TFCI				This choice is made if : a) The TFCS refers to the downlink AND b) The mode is FDD and one of the Radio Links of the concerned UE is assigned one or more DSCH transport channels
>>Transport Format Combination_DCH		1..<maxTFCI_1_Combs>		The first instance of the <i>Transport Format Combination_DCH</i> IE corresponds to TFCI (field 1) = 0, the second to TFCI (field 1) = 1 and so on.
>>>CTFC(field1)	M		9.2.1.14A	
>>>Choice Signalling Method	M			
>>>>TFCI Range				
>>>>>TFC Mapping on DSCH		1..<maxNoTFCIGroups>		
>>>>>Max TFCI(field2) Value	M		INTEGER(1..<maxTFCI_2_Combs -	This is the Maximum value in the range of TFCI(field2) values for which the specified

			1>)	CTFC(field2) applies
>>>>>CTFC(field 2)	M		9.2.1.14A	Integer number calculated according to [16] The calculation of CTFC ignores any DCH transport channels which may be assigned
>>>Explicit				
>>>>Transport Format Combination_DSCH		1..<maxTFCI_2_Combs>		The first instance of the <i>Transport Format Combination_DSCH</i> IE corresponds to TFCI (field2) = 0, the second to TFCI (field 2) = 1 and so on.
>>>>>CTFC(field 2)	M		9.2.1.14A	Integer number calculated according to [16] . The calculation of CTFC ignores any DCH transport channels which may be assigned

Condition	Explanation
PhysChan	The choice shall be present if the TFCS concerns a UL DPCH [FDD – or PRACH channel].

Range bound	Explanation
<i>maxnoofTFCs</i>	The maximum number of Transport Format Combinations.
<i>maxTFCI_1_Combs</i>	Maximum number of TFCI (field 1) combinations (given by 2 raised to the power of the length of the TFCI (field 1)).
<i>maxTFCI_2_Combs</i>	Maximum number of TFCI (field 2) combinations (given by 2 raised to the power of the length of the TFCI (field 2)).
<i>maxNoTFCIGroups</i>	Maximum number of groups, each group described in terms of a range of TFCI(field 2) values for which a single value of CTFC(field2) applies.
MaxCTFC	Maximum number of the CTFC value is calculated according to the following: $\sum_{i=1}^I (L_i - 1)P_i$ with the notation according to ref. [16].

### [9.2.1.63A E-DCH Transport Format Combination Set \(E-TFCS\)](#)

[Note: Coding is FFS](#)

### 9.2.1.64 Transport Format Set

The Transport Format Set is defined as the set of Transport Formats associated to a Transport Channel, e.g. DCH.

[TDD - The Transport Format Set for each transport channel within the same CCTrCH shall have the same value for the 2<sup>nd</sup> *Interleaving Mode* IE.]

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
<b>Dynamic Transport Format Information</b>		$1..<maxTFcount>$		The first instance of the parameter corresponds to TFI zero, the second to 1 and so on.
>Number of Transport Blocks	M		INTEGER (0..512)	
>Transport Block Size	C – Blocks		INTEGER (0..5000)	Unit: Bits
>CHOICE Mode	M			
>>TDD				
>>>Transmission Time Interval Information	C-TTIdynamic	$1..<maxTTIcount>$		
>>>>Transmission Time Interval	M		ENUMERATED(10, 20, 40, 80,...)	Unit: msec
<b>Semi-static Transport Format Information</b>		1		
>Transmission Time Interval	M		ENUMERATED (10, 20, 40, 80, dynamic, ...)	Unit: msec Value "dynamic" for TDD only
>Type of Channel Coding	M		ENUMERATED (No codingTDD, Convolutional, Turbo,...)	[FDD - The value "No codingTDD" shall be treated as logical error if received]
>Coding Rate	C – Coding		ENUMERATED (1/2, 1/3,...)	
>Rate Matching Attribute	M		INTEGER (1..maxRM)	
>CRC size	M		ENUMERATED (0, 8, 12, 16, 24,...)	
>CHOICE Mode	M			
>>TDD				
>>>2 <sup>nd</sup> Interleaving Mode	M		ENUMERATED(Frame related, Timeslot related,...)	

Condition	Explanation
Blocks	The IE shall be present if the <i>Number of Transport Blocks</i> IE is set to a value greater than 0.
Coding	The IE shall be present if <i>Type of Channel Coding</i> IE is set to "Convolutional" or "Turbo".
TTIdynamic	The IE shall be present if the <i>Transmission Time Interval</i> IE in the <i>Semi-static Transport Format Information</i> IE is set to "dynamic".

Range bound	Explanation
<i>maxTFcount</i>	The maximum number of different transport formats that can be included in the Transport format set for one transport channel.
<i>maxRM</i>	The maximum number that could be set as rate matching attribute for a transport channel.
<i>maxTTIcount</i>	The amount of different TTI that are possible for that transport format is.



## 9.2.1.65 TrCH Source Statistics Descriptor

Defines the statistics of the data transmitted in the transport channel. This information may be used in reserving resources in the DRNS.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
TrCH Source Statistics Descriptor			ENUMERATED(Speech, RRC, Unknown, ...)	"Speech" = Statistics of the data corresponds to speech. "RRC" = Statistics of the data corresponds to RRC signalling "Unknown" = The statistics of the data is unknown

## 9.2.1.66 UARFCN

The UTRA Absolute Radio Frequency Channel Number defines the carrier.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
UARFCN			INTEGER(0..16383, ...)	Corresponds to: 0.0Hz.. 3276.6MHz see ref. [6] and ref. [7].

## 9.2.1.66A UE Identity

The *UE Identity* IE identifies the UE by one of its Permanent NAS Identifier.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
CHOICE <i>UE Identity</i>	M			
> <i>IMSI</i>				
>>IMSI	M		9.2.1.31	
> <i>IMEI</i>				
>>IMEI	M		9.2.1.30T	
> <i>IMEISV</i>				
>>IMEISV	M		9.2.1.30U	

## 9.2.1.67 UL FP Mode

This parameter defines if normal or silent mode of the Frame Protocol shall be used for the UL.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
UL FP Mode			ENUMERATED(Normal, Silent,...)	

## 9.2.1.68 UL Interference Level

Void

## 9.2.1.68A Uncertainty Ellipse

This IE contains the uncertainty ellipse used to describe a possible shape of the geographical area of a cell.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Uncertainty semi-major	M		INTEGER(0..127)	The uncertainty "r" is derived from the "uncertainty code" k by $r = 10 \times (1.1^k - 1)$
Uncertainty semi-minor	M		INTEGER(0..127)	The uncertainty "r" is derived from the "uncertainty code" k by $r = 10 \times (1.1^k - 1)$
Orientation of major axis	M		INTEGER(0..179)	The relation between the IE value (N) and the angle (a) in degrees it describes is $2N \leq a < 2(N+1)$ . The values 90..179 shall not be used.

### 9.2.1.68B Unidirectional DCH Indicator

The *Unidirectional DCH Indicator* IE indicates that the DCH is unidirectional.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Unidirectional DCH Indicator			ENUMERATED (Downlink DCH only, Uplink DCH only)	Downlink DCH only shall only be used by TDD.

### 9.2.1.69 Uplink SIR

The UL SIR indicates a received UL SIR.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Uplink SIR			INTEGER (-82..173)	Value = Uplink SIR/10 Unit dB Range -8.2..+17.3 Step 0.1 dB

### 9.2.1.70 URA ID

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
URA ID			INTEGER(0..65 535)	

### 9.2.1.70A UTRAN Access Point Position

The UTRAN Access Point Position indicates the exact geographical position of the base station antenna.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Latitude Sign	M		ENUMERATED(North, South)	
Degrees of Latitude	M		INTEGER(0..2 <sup>23</sup> -1)	The IE value (N) is derived by this formula: $N \leq 2^{23} \times X / 90 < N+1$ X being the latitude in degree (0°.. 90°)
Degrees of Longitude	M		INTEGER(-2 <sup>23</sup> ..2 <sup>23</sup> -1)	The IE value (N) is derived by this formula: $N \leq 2^{24} \times X / 360 < N+1$ X being the longitude in degree (-180°..+180°)

### 9.2.1.70B URA Information

The *URA Information* IE contains URA Information for one cell.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
URA ID	M		9.2.1.70	
Multiple URAs Indicator	M		9.2.1.41	
<b>RNCs with Cells in the Accessed URA</b>		0.. <maxRNCinURA-1>		Other RNCs having at least one cell in the URA identified by the <i>URA ID</i> IE.
>RNC-ID	M		9.2.1.50	

Range Bound	Explanation
maxRNCinURA	Maximum number of RNC in one URA.

### 9.2.1.71 UTRAN Cell Identifier (UC-ID)

The UC-ID (UTRAN Cell identifier) is the identifier of a cell in one UTRAN.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
RNC-ID	M		9.2.1.50	
C-ID	M		9.2.1.6	

### 9.2.1.72 Neighbouring TDD Cell Information LCR

The *Neighbouring TDD Cell Information LCR* IE provides information for 1.28Mcps TDD cells that are a neighbouring cells to a cell in the DRNC.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
<b>Neighbouring TDD Cell Information LCR</b>		<i>1..&lt;maxno ofLCRTDD neighbours&gt;</i>			–	
>C-ID	M		9.2.1.6		–	
>UARFCN	M		9.2.1.66	Corresponds to Nt in ref. [7]	–	
>Frame Offset	O		9.2.1.30		–	
>Cell Parameter ID	M		9.2.1.8		–	
>SCTD Indicator	M		9.2.1.78		–	
>Cell Individual Offset	O		9.2.1.7		–	
>DPCH Constant Value	O		9.2.1.23		–	
>PCCPCH Power	O		9.2.1.43		–	
>Restriction State Indicator	O		9.2.1.48C		–	
>Coverage Indicator	O		9.2.1.12G		YES	ignore
>Antenna Co-location Indicator	O		9.2.1.2C		YES	ignore
>HCS Prio	O		9.2.1.30N		YES	ignore
>Cell Capability Container TDD LCR	O		9.2.3.1b		YES	ignore
> SNA Information	O		9.2.1.52Ca		YES	ignore

Range bound	Explanation
<i>maxnoofLCRTDDneighbours</i>	Maximum number of neighbouring 1.28Mcps TDD cell for one cell.

### 9.2.1.73 Permanent NAS UE Identity

This element is used to identify the UE in UTRAN.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
<i>Choice Permanent NAS UE Identity</i>				
>IMSI				
>>IMSI	M		9.2.1.31	

### 9.2.1.74 SFN-SFN Measurement Reference Point Position

The SFN-SFN Measurement Reference Point Position indicates the exact geographical position of the SFN-SFN measurement reference point. The altitude shall be included when available.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Geographical Coordinates	M		9.2.1.30F	
Altitude and direction	O		9.2.1.2B	

### 9.2.1.75 UTRAN Access Point Position with Altitude

The UTRAN Access Point Position with Altitude indicates the exact geographical position of the base station antenna. The altitude shall be included when available.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Geographical Coordinates	M		9.2.1.30F	
Altitude and direction	O		9.2.1.2B	

## 9.2.1.76 SFN-SFN Measurement Time Stamp

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
CHOICE Mode	M			
>FDD				
>>SFN	M		9.2.1.52A	Indicates the SFN of the reference cell at which the measurement has been performed.
>TDD				
>>SFN	M		9.2.1.52A	Indicates the SFN of the reference cell at which the measurement has been performed.
>>Time Slot	M		9.2.1.56	Indicates the Time Slot of the reference cell at which this measurement has been performed.

## 9.2.1.77 SFN-SFN Value

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
CHOICE Mode	M			
>FDD				
>>SFN-SFN	M		INTEGER(0..614399)	According to mapping in [23].
>TDD				
>>SFN-SFN	M		INTEGER(0..40961)	According to mapping in [24].

## 9.2.1.78 SCTD Indicator

Indicates if SCTD antenna diversity is applied or not to the PCCPCH and PICH [3.84Mcps TDD].

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
SCTD Indicator			ENUMERATED(active, inactive)	

## 9.2.1.79 Congestion Cause

The *Congestion Cause* IE indicates the cause of a congestion situation:

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Congestion Cause			ENUMERATED (UTRAN Dynamic Resources, UTRAN Semistatic Resources, ...)	

The meaning of the different congestion cause values is described in the following table:

Congestion cause	Meaning

UTRAN Dynamic Resources	UL and/or DL resource congestion situation mainly caused by the UL and/or DL UTRAN Dynamic Resources. This type of congestion situation is, e.g. related to the limitation of the DL transmitted carrier power of the cell(s), or the UL Interference situation in the concerned cell(s).
UTRAN Semistatic Resources	UL and/or DL resource congestion situation mainly related to UTRAN Semistatic Resources (e.g. channelisation codes, Node-B resources, ..).

## 9.2.2 FDD Specific Parameters

This subclause contains parameters that are specific to FDD.

### 9.2.2.a ACK-NACK Repetition Factor

The *ACK-NACK Repetition Factor* IE indicates the consecutive repetition of the ACK and NACK.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
ACK-NACK Repetition Factor			INTEGER (1..4,...)	Step: 1

### 9.2.2.b ACK Power Offset

The *ACK Power Offset* IE indicates Power offset used in the UL between the HS-DPCCH slot carrying HARQ ACK information and the associated DPCCH.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
ACK Power Offset			INTEGER (0..8,...)	According to mapping in ref. [21] subclause 4.2.1.

### 9.2.2.A Active Pattern Sequence Information

Defines the parameters for the compressed mode gap pattern sequence activation. For details see ref. [16].

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
CM Configuration Change CFN	M		CFN 9.2.1.9	
<b>Transmission Gap Pattern Sequence Status</b>		0.. <maxTGPS>		If the group is not present, none of the pattern sequences are activated.
>TGPSI Identifier	M		INTEGER(1..<MaxTGPS>)	Establish a reference to the compressed mode pattern sequence. Up to <MaxTGPS> simultaneous compressed mode pattern sequences can be activated.
>TGPRC	M		INTEGER(0..511)	The number of transmission gap patterns within the Transmission Gap Pattern Sequence. 0=Infinity.
>TGCFN	M		CFN 9.2.1.9	Connection Frame Number of the first frame of the first pattern 1 within the Transmission Gap Pattern Sequence.

Range bound	Explanation
maxTGPS	Maximum number of active pattern sequences. Value 6.

### 9.2.2.B Adjustment Period

*Adjustment Period* IE defines the period to be used for power balancing.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Adjustment Period			INTEGER (1 .. 256)	Unit: Frames

### 9.2.2.C Adjustment Ratio

*Adjustment Ratio* IE (*Radj*) defines the convergence rate used for the associated Adjustment Period.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Adjustment Ratio			INTEGER (0 .. 100)	The Adjustment Ratio is given with a granularity of 0.01 0 -> 0.00 1 -> 0.01 ... 100 -> 1.00

### 9.2.2.D Cell Capability Container FDD

The Cell Capability Container FDD indicates which functionalities a cell supports.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Cell Capability Container FDD			BIT STRING (32)	Each bit indicates whether a cell supports a particular functionality or not. The value 1 of a bit indicates that the corresponding functionality is supported in a cell and value 0 indicates that the corresponding functionality is not supported in a cell. Each bit is defined as follows. The first bit: Flexible Hard Split Support Indicator. The second bit: Delayed Activation Support Indicator. The third bit: HS-DSCH Support Indicator. The fourth bit: DSCH Support Indicator. Note that undefined bits are considered as a spare bit and spare bits shall be set to 0 by the transmitter and shall be ignored by the receiver.

### 9.2.2.E Cell Portion ID

Cell Portion ID is the unique identifier for a cell portion within a cell. See [11].

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Cell Portion ID			INTEGER (0..63,...)	

### 9.2.2.1 Chip Offset

The Chip Offset is defined as the radio timing offset inside a radio frame. The Chip Offset is used as offset for the DL DPCH relative to the Primary CPICH timing.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Chip Offset			INTEGER (0..38399)	Unit: Chips

### 9.2.2.2 Closed Loop Mode1 Support Indicator

The Closed Loop Mode1 Support Indicator indicates whether the particular cell is capable to support Closed loop mode1 or not

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Closed Loop Mode1 Support Indicator			ENUMERATED(Closed loop mode1 Supported, Closed loop mode1 not supported).	

### 9.2.2.3 Closed Loop Mode2 Support Indicator

The Closed Loop Mode2 Support Indicator indicates whether the particular cell is capable to support Closed loop mode2 or not.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Closed Loop Mode2 Support Indicator			ENUMERATED(Closed loop mode2 Supported, Closed loop mode2 not supported).	

### 9.2.2.3A Closed Loop Timing Adjustment Mode

Indicates when the phase/amplitude adjustment is performed in the DL in relation to the receipt of the UL feedback command in case of closed loop mode transmit diversity on DPCH.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Closed Loop Timing Adjustment Mode			ENUMERATED(Offset1, Offset2,...)	According to [10] subclause 7.1: Offset1 = slot(j+1)mod15 Offset2 = slot(j+2)mod15

### 9.2.2.4 Compressed Mode Method

Void

#### 9.2.2.4A DCH FDD Information

The *DCH FDD Information* IE provides information for DCHs to be established.



IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
<b>DCH FDD Information</b>		<i>1..&lt;maxno ofDCHs&gt;</i>			–	
>Payload CRC Presence Indicator	M		9.2.1.42		–	
>UL FP Mode	M		9.2.1.67		–	
>ToAWS	M		9.2.1.58		–	
>ToAWE	M		9.2.1.57		–	
<b>&gt;DCH Specific Info</b>		<i>1..&lt;maxno ofDCHs&gt;</i>			–	
>>DCH ID	M		9.2.1.16		–	
>>TrCH Source Statistics Descriptor	M		9.2.1.65		–	
>>Transport Format Set	M		9.2.1.64	For the UL.	–	
>>Transport Format Set	M		9.2.1.64	For the DL.	–	
>>BLER	M		9.2.1.4	For the UL.	–	
>>BLER	M		9.2.1.4	For the DL.	–	
>>Allocation/Retention Priority	M		9.2.1.1		–	
>>Frame Handling Priority	M		9.2.1.29		–	
>>QE-Selector	M		9.2.1.46A		–	
>>DRAC control	M		9.2.2.13		–	
>>Guaranteed Rate Information	O		9.2.1.30M		YES	Ignore
>>Traffic Class	M		9.2.1.58A		YES	Ignore
>>Unidirectional DCH Indicator	O		9.2.1.68B		YES	Reject
>TNL QoS	O		9.2.1.56A		YES	Ignore

Range bound	Explanation
<i>maxnoofDCHs</i>	Maximum number of DCHs for one UE.

### [9.2.2.4B E-DCH FDD Information](#)

[The E-DCH FDD Information IE provides information for an E-DCH to be established.](#)

<u>IE/Group Name</u>	<u>Presence</u>	<u>Range</u>	<u>IE Type and Reference</u>	<u>Semantics Description</u>	<u>Criticality</u>	<u>Assigned Criticality</u>
<u>UE Capabilities Information</u>		1				
>E-DCH Physical Layer Category	M		9.2.1.30W			
<u>E-DCH MAC-d Flow Information</u>		1..<maxno ofMACdFlows>				
>E-DCH MAC-d Flow ID	M		9.2.1.30O			
>Allocation/Retention Priority	M		9.2.1.1			
>TNL QoS	O		9.2.1.56A			
>Payload CRC Presence Indicator	M		9.2.1.42			
>Maximum Number of Retransmissions for E-DCH	O		9.2.1.30OF			
<u>&gt;Data Description Indicator</u>		1..<maxno ofDDIs>				
>> E-DCH DDI Value	M		9.2.1.45C			
>>Associated E-DCH MAC-d Flow	M		E-DCH MAC-d Flow ID 9.2.1.30O	The E-DCH MAC-d Flow ID shall be one of the flow IDs defined in the E-DCH MAC-d Flow Specific Information of this IE. Multiple E-DCH DDI Values can be associated with the same E-DCH MAC-d Flow ID.		
>>MAC-d PDU Size	M		9.2.1.34A			
>>Scheduling Priority Indicator	M		9.2.1.51A			
>>MAC-es Guaranteed Bit Rate	O		9.2.1.30OH			

<u>Range bound</u>	<u>Explanation</u>
<u>maxnoofMACdFlows</u>	Maximum number of MAC-d flows.
<u>maxnoofDDIs</u>	Maximum number of Data Description Indicators

### 9.2.2.4C E-DCH FDD Information Response

The *E-DCH FDD Information Response* IE provides information for E-DCH MAC-d flows that have been established or modified. It also provides additional E-DCH information determined within the DRNS.

<u>IE/Group Name</u>	<u>Presence</u>	<u>Range</u>	<u>IE Type and Reference</u>	<u>Semantics Description</u>
<u>E-DCH MAC-d Flow Specific Information Response</u>		0..<maxnoof MACdFlows>		
>E-DCH MAC-d Flow ID	M	>	9.2.1.30OE	
>Binding ID	O		9.2.1.3	
>Transport Layer Address	O		9.2.1.62	

<u>Range bound</u>	<u>Explanation</u>
<u>maxnoofMACdFlows</u>	Maximum number of MAC-d flows.

### 9.2.2.4D E-DCH FDD DL Control Channel Information

The *E-DCH FDD DL Control Channel Information* IE provides information for E-DCH specific DL Control Channels to be provided to UE via RRC signalling.

<u>IE/Group Name</u>	<u>Presence</u>	<u>Range</u>	<u>IE Type and Reference</u>	<u>Semantics Description</u>
<a href="#">E-AGCH and E-RGCH And E-HICH FDD Scrambling Code</a>	<a href="#">M</a>		<a href="#">DL Scrambling Code</a> <a href="#">9.2.2.13</a>	<a href="#">Scrambling code on which E-AGCH, E-RGCH and E-HICH are transmitted.</a> <a href="#">0= Primary scrambling code of the cell 1..15 = Secondary scrambling code</a>
<a href="#">E-AGCH Channelisation Code</a>	<a href="#">O</a>		<a href="#">FDD DL Channelisation Code Number</a> <a href="#">9.2.2.14</a>	
<a href="#">E-RNTI</a>	<a href="#">O</a>		<a href="#">9.2.1.30V</a>	
<a href="#">E-RGCH and E-HICH Channelisation Code</a>	<a href="#">M</a>		<a href="#">FDD DL Channelisation Code Number</a> <a href="#">9.2.2.14</a>	
<a href="#">E-RGCH Sequence Number</a>	<a href="#">M</a>		<a href="#">INTEGER (1..20)</a>	
<a href="#">E-HICH Sequence Number</a>	<a href="#">M</a>		<a href="#">INTEGER (1..20)</a>	

### 9.2.2.4E E-DCH RL Indication

Indicates whether a RL is an E-DCH RL.

<u>IE/Group Name</u>	<u>Presence</u>	<u>Range</u>	<u>IE Type and Reference</u>	<u>Semantics Description</u>
<a href="#">E-DCH RL Indication</a>			<a href="#">ENUMERATED(E-DCH, non E-DCH)</a>	

### 9.2.2.4F E-DCH FDD Information To Modify

The *E-DCH FDD Information* IE provides information for an E-DCH to be modified.

<u>IE/Group Name</u>	<u>Presence</u>	<u>Range</u>	<u>IE Type and Reference</u>	<u>Semantics Description</u>	<u>Criticality</u>	<u>Assigned Criticality</u>
<u>E-DCH MAC-d Flow Information</u>		<u>1..&lt;maxno ofMACdFlows&gt;</u>				
>E-DCH MAC-d Flow ID	<u>M</u>		<u>9.2.1.30O</u>			
>Allocation/Retention Priority	<u>M</u>		<u>9.2.1.1</u>			
>TNL QoS	<u>O</u>		<u>9.2.1.56A</u>			
>Payload CRC Presence Indicator	<u>M</u>		<u>9.2.1.42</u>			
>Maximum Number of Retransmissions for E-DCH	<u>O</u>		<u>9.2.1.30OF</u>			
> <u>Data Description Indicator</u>		<u>0..&lt;maxno ofDDIs&gt;</u>				
>> E-DCH DDI Value	<u>M</u>		<u>9.2.1.45C</u>			
>>Associated E-DCH MAC-d Flow	<u>M</u>		<u>E-DCH MAC-d Flow ID</u> <u>9.2.1.30O</u>	<u>The E-DCH MAC-d Flow ID shall be one of the flow IDs defined in the E-DCH MAC-d Flow Specific Information of this IE. Multiple E-DCH DDI Values can be associated with the same E-DCH MAC-d Flow ID.</u>		
>>MAC-d PDU Size	<u>M</u>		<u>9.2.1.34A</u>			
>>Scheduling Priority Indicator	<u>M</u>		<u>9.2.1.51A</u>			
>>MAC-es Guaranteed Bit Rate	<u>O</u>		<u>9.2.1.30OH</u>			

<u>Range bound</u>	<u>Explanation</u>
<u>maxnoofMACdFlows</u>	<u>Maximum number of MAC-d flows.</u>
<u>maxnoofDDIs</u>	<u>Maximum number of Data Description Indicators</u>

### 9.2.2.5 D-Field Length

Void

### 9.2.2.6 Diversity Control Field

Void.

### 9.2.2.7 Diversity Indication

Void.

### 9.2.2.8 Diversity Mode

Define the diversity mode to be applied.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Diversity Mode			ENUMERATED(None, STTD, Closed loop mode 1, Closed loop mode2,...)	

### 9.2.2.9 DL DPCH Slot Format

Indicates the slot format used in DPCH in DL, according to ref. [8].

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
DL DPCH Slot Format			INTEGER (0..16,...)	

### 9.2.2.9A DL DPCH Timing Adjustment

The DL DPCH Timing Adjustment indicates that a timing adjustment of the related radio link is required. It also indicates whether the timing adjustment shall consist of a timing advance or a timing delay with respect to the SFN timing. The adjustment always consists of 256 chips.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
DL DPCH Timing Adjustment			ENUMERATED(timing advance, timing delay)	The size of the timing adjustment is 256 chips.

### 9.2.2.10 DL Power

Void

### 9.2.2.10A DL Power Balancing Information

The *DL Power Balancing Information* IE provides information for power balancing to be activated in the relevant RL(s).

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Power Adjustment Type	M		9.2.2.28		–	
DL Reference Power	C-Common		DL power 9.2.1.21A	Power on DPCH	–	
<b>DL Reference Power Information</b>	C-Individual	<i>1..&lt;maxnoof RLS&gt;</i>			–	
>RL ID	M		9.2.1.49		–	
>DL Reference Power	M		DL power 9.2.1.21A	Power on DPCH	–	
Max Adjustment Step	C-CommonOrIndividual		9.2.2.23		–	
Adjustment Period	C-CommonOrIndividual		9.2.2.B		–	
Adjustment Ratio	C-CommonOrIndividual		9.2.2.C		–	

Condition	Explanation
Common	The IE shall be present if the <i>Power Adjustment Type</i> IE is set to "Common".
Individual	The IE shall be present if the <i>Power Adjustment Type</i> IE is set to "Individual".
CommonOrIndividual	The IE shall be present if the <i>Power Adjustment Type</i> IE is set to "Common" or "Individual".

Range Bound	Explanation
<i>maxnoofRLs</i>	Maximum number of Radio Links for a UE.

### 9.2.2.10B DL Power Balancing Activation Indicator

The *DL Power Balancing Activation Indicator* IE indicates that the power balancing is activated in the RL.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
DL Power Balancing Activation Indicator			ENUMERATED(DL Power Balancing Activated).	

### 9.2.2.10C DL Reference Power Information

The *DL Reference Power Information* IE provides reference power of the power balancing to be used in the relevant RL(s).

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Common DL Reference Power	O		DL power 9.2.1.21A	Power on DPCH	–	
Individual DL Reference Power Information		<i>0..&lt;maxnoofRLs&gt;</i>			–	
>RL ID	M		9.2.1.49		–	
>DL Reference Power	M		DL power 9.2.1.21A	Power on DPCH	–	

Range bound	Explanation
<i>maxnoofRLs</i>	Maximum number of RLs for a UE.

### 9.2.2.10D DL Power Balancing Updated Indicator

The *DL Power Balancing Updated Indicator* IE indicates that the power balancing related parameters is updated in the RL.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
DL Power Balancing Updated Indicator			ENUMERATED(DL Power Balancing Updated).	

### 9.2.2.11 DL Scrambling Code

DL Scrambling code to be used by the RL. One cell may have multiple DL Scrambling codes available.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
DL Scrambling Code			INTEGER (0..15)	0= Primary scrambling code of the cell 1...15= Secondary scrambling code

### 9.2.2.12 Downlink Frame Type

Void

### 9.2.2.12A DPC Mode

The *DPC Mode* IE indicates the DPC mode to be applied [10].

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
DPC Mode			ENUMERATED (Mode0, Mode1, ...)	Mode0: The DRNS shall estimate the UE transmitted TPC command and update the DL power in every slot Mode1: The DRNS shall estimate the UE transmitted TPC command over three slots and shall update the DL power in every three slots

### 9.2.2.13 DRAC Control

This IE indicates whether the DCH is control by DRAC or not.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
DRAC Control			ENUMERATED (Requested, Not-Requested)	Requested means that DCH is controlled by DRAC

### 9.2.2.13A DSCH FDD Information

The *DSCH FDD Information* IE provides information for DSCHs to be established.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
<b>DSCH Specific FDD Information</b>		1..<maxno ofDSCHs>		See Note 1 below.	–	
>DSCH ID	M		9.2.1.26A		–	
>TrCH Source Statistics Descriptor	M		9.2.1.65		–	
>Transport Format Set	M		9.2.1.64	For DSCH	–	
>Allocation/Retention Priority	M		9.2.1.1		–	
>Scheduling Priority Indicator	M		9.2.1.51A		–	
>BLER	M		9.2.1.4		–	
>Traffic Class	M		9.2.1.58A		YES	ignore
>Binding ID	O		9.2.1.3	Shall be ignored if bearer establishment with ALCAP.	YES	ignore
>Transport Layer Address	O		9.2.1.62	Shall be ignored if bearer establishment with ALCAP.	YES	ignore
PDSCH RL ID	M		RL ID 9.2.1.49		–	
TFCS	M		9.2.1.63	For DSCH	–	
Enhanced DSCH PC	O		9.2.2.13D		YES	ignore

Range bound	Explanation
<i>maxnoofDSCHs</i>	Maximum number of DSCHs for one UE.

Note 1: This information element is a simplified representation of the ASN.1. Repetition 1 and repetition 2-*maxnoofDSCHs* are represented by separate ASN.1 structures with different criticality.

### 9.2.2.13B DSCH FDD Information Response

The *DSCH FDD Information Response* IE provides information for DSCHs that have been established or modified.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
<b>DSCH Specific FDD Information Response</b>		1..<maxno ofDSCHs>			–	
>DSCH ID	M		9.2.1.26A		–	
>DSCH Flow Control Information	M		9.2.1.26B		–	
>Binding ID	O		9.2.1.3		–	
>Transport Layer Address	O		9.2.1.62		–	
PDSCH Code Mapping	M		9.2.2.27A	PDSCH code mapping to be used	–	

Range bound	Explanation
<i>maxnoofDSCHs</i>	Maximum number of DSCHs for one UE.



## 9.2.2.13Bb DSCH-RNTI

Void.

## 9.2.2.13C FDD DCHs To Modify

The *FDD DCHs To Modify* IE provides information for DCHs to be modified.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
<b>FDD DCHs To Modify</b>		<i>1..&lt;maxno ofDCHs&gt;</i>			–	
>UL FP Mode	O		9.2.1.67		–	
>ToAWS	O		9.2.1.58		–	
>ToAWE	O		9.2.1.57		–	
>Transport Bearer Request Indicator	M		9.2.1.61		–	
<b>&gt;DCH Specific Info</b>		<i>1..&lt;maxno ofDCHs&gt;</i>			–	
>>DCH ID	M		9.2.1.16		–	
>>Transport Format Set	O		9.2.1.64	For the UL.	–	
>>Transport Format Set	O		9.2.1.64	For the DL.	–	
>>Allocation/Retention Priority	O		9.2.1.1		–	
>>Frame Handling Priority	O		9.2.1.29		–	
>>DRAC Control	O		9.2.2.13		–	
>>Guaranteed Rate Information	O		9.2.1.30M		YES	ignore
>>Traffic Class	O		9.2.1.58A		YES	ignore
>TNL QoS	O		9.2.1.56A		YES	ignore

Range bound	Explanation
<i>maxnoofDCHs</i>	Maximum number of DCHs for one UE.

## 9.2.2.13D Enhanced DSCH PC

The Enhanced DSCH PC includes all the parameters which are needed for DSCH power control improvement during soft handover.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Enhanced DSCH PC Wnd	M		9.2.2.13G	
Enhanced DSCH PC Counter	M		9.2.2.13E	
Enhanced DSCH Power Offset	M		9.2.2.13H	

## 9.2.2.13E Enhanced DSCH PC Counter

The Enhanced DSCH PC Counter parameter gives the number of correct cell ID command to receive in the averaging window, *Enhance DSCH PC Wnd* IE, see ref. [10] subclause 5.2.2.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Enhanced DSCH PC Counter			INTEGER(1..50)	

## 9.2.2.13F Enhanced DSCH PC Indicator

The Enhanced DSCH PC Indicator indicates whether Enhanced DSCH PC is in use by the UE or not.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Enhanced DSCH PC Indicator			ENUMERATED(Enhanced DSCH PC Active in the UE, Enhanced DSCH PC not Active in the UE)	

### 9.2.2.13G Enhanced DSCH PC Wnd

The Enhanced DSCH PC Wnd parameter shows the window size to decide primary or non-primary cell, see ref. [10] subclause 5.2.2.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Enhanced DSCH PC Wnd			INTEGER(1..10)	

### 9.2.2.13H Enhanced DSCH Power Offset

The Enhanced DSCH Power Offset parameter gives the power offset to be added on DSCH when cell is decided to be primary.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Enhanced DSCH Power Offset			INTEGER(-15..0)	Unit dB, step 1 dB

### 9.2.2.13I Enhanced Primary CPICH Ec/No

Energy per PN chip divided by the total received power spectral density measured on the Primary CPICH by the UE.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Enhanced Primary CPICH Ec/No			INTEGER(0..49)	According to the mapping of the Primary CPICH Ec/No UE measurement defined in ref. [23] and [24]

### 9.2.2.14 FDD DL Channelisation Code Number

The DL Channelisation Code Number indicates the DL Channelisation Code number for a specific DL physical channel.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
FDD DL Channelisation Code Number			INTEGER(0..511)	According to the mapping in [27]. The maximum value is equal to the DL spreading factor –1

### 9.2.2.14A FDD DL Code Information

The *FDD DL Code Information* IE provides FDD DL Code information for all DPCHs of one Radio Link.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
<b>FDD DL Code Information</b>		1.. <maxnoof DLCodes			–	
>DL Scrambling Code	M		9.2.2.11		–	
>FDD DL Channelisation Code Number	M		9.2.2.14		–	
>Transmission Gap Pattern Sequence Scrambling Code Information	O		9.2.2.47B		–	

Range bound	Explanation
maxnoofDLCodes	Maximum number of DL Channelisation Codes for one UE.

### 9.2.2.15 FDD S-CCPCH Offset

The Secondary CCPCH offset is defined as the time offset towards the Primary CCPCH in the cell. The offset is a multiple of 256 chips.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
FDD S-CCPCH Offset			INTEGER(0..149)	0: 0 chip 1: 256 chip 2: 512 chip .. 149: 38144 chip ref. [8]

### 9.2.2.16 FDD TPC Downlink Step Size

This parameter indicates step size for the DL power adjustment.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
FDD TPC Downlink Step Size			ENUMERATED(0.5, 1, 1.5, 2,...)	

### 9.2.2.16A First RLS Indicator

The First *RLS Indicator* IE indicates if a specific Radio Link and all Radio Links which are part of the same Radio Link Set, shall be considered as the first radio links established towards the UE or not.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
First RLS Indicator			ENUMERATED(first RLS, not first RLS)	

### 9.2.2.17 Gap Position Mode

Void.

### 9.2.2.18 Gap Period (TGP)

Void.

## 9.2.2.19 Gap Starting Slot Number (SN)

Void

## 9.2.2.19a HS-DSCH FDD Information

The *HS-DSCH FDD Information* IE is used for initial addition of HS-DSCH information to UE Context.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
HS-DSCH MAC-d Flows Information	M		9.2.1.30OA	
<b>UE Capabilities Information</b>		1		
>HS-DSCH Physical Layer Category	M		9.2.1.30Oa	
MAC-hs Reordering Buffer Size for RLC-UM	M		9.2.1.34Ab	
CQI Feedback Cycle k	M		9.2.2.24a	
CQI Repetition Factor	C-CQICyclek		9.2.2.24c	
ACK-NACK Repetition Factor	M		9.2.2.a	
CQI Power Offset	M		9.2.2.24b	
ACK Power Offset	M		9.2.2.b	
NACK Power Offset	M		9.2.2.26a	
HS-SCCH Power Offset	O		9.2.2.19d	

Condition	Explanation
CQICyclek	The IE shall be present if the <i>CQI Feedback Cycle k</i> IE is set to a value greater than 0.

## 9.2.2.19b HS-DSCH FDD Information Response

The *HS-DSCH FDD Information Response* IE provides information for HS-DSCH MAC-d flows that have been established or modified. It also provides additional HS-DSCH information determined within the DRNS.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
<b>HS-DSCH MAC-d Flow Specific Information Response</b>		<i>0..&lt;maxnoof MACdFlows &gt;</i>		
>HS-DSCH MAC-d Flow ID	M		9.2.1.30O	
>Binding ID	O		9.2.1.3	
>Transport Layer Address	O		9.2.1.62	
>HS-DSCH Initial Capacity Allocation	O		9.2.1.30Na	
<b>HS-SCCH Specific Information Response</b>		<i>0..&lt;maxnoof HSSCCHcodes&gt;</i>		
>Code Number	M		INTEGER (0..127)	
HS-PDSCH And HS-SCCH Scrambling Code	O		DL Scrambling Code 9.2.2.11	
Measurement Power Offset	O		9.2.2.24d	
CHOICE <i>HARQ Memory Partitioning</i>	O			
> <i>Implicit</i>				
>>Number of Processes	M		INTEGER (1..8,...)	For HARQ process IDs going from 0 to "Number of Processes" – 1 the Total number of soft channel bits [42] is partitioned equally between all HARQ processes according to the rules in [16].
> <i>Explicit</i>				
>> <b>HARQ Memory Partitioning Information</b>		<i>1..&lt;maxnoof HARQprocesses&gt;</i>		The first instance of the parameter corresponds to HARQ process with identifier 0, the second instance to HARQ process with identifier 1, and so on.
>>>Process Memory Size	M		9.2.1.45B	See [16]

Range bound	Explanation
<i>maxnoofMACdFlows</i>	Maximum number of MAC-d flows.
<i>maxnoofHSSCCHcodes</i>	Maximum number of HS-SCCH codes.
<i>maxnoofHARQprocesses</i>	Maximum number of HARQ processes.

### 9.2.2.19c HS-DSCH FDD Update Information

The *HS-DSCH FDD Update Information* IE provides information for HS-DSCH to be updated. At least one IE shall be presented.

IE/Group name	Presence	Range	IE Type and Reference	Semantic Description	Criticality	Assigned Criticality
HS-SCCH Code Change Indicator	O		9.2.1.30R		–	
CQI Feedback Cycle k	O		9.2.2.24a		–	
CQI Repetition Factor	O		9.2.2.24c		–	
ACK-NACK Repetition Factor	O		9.2.2.a		–	
CQI Power Offset	O		9.2.2.24b		–	
ACK Power Offset	O		9.2.2.b		–	
NACK Power Offset	O		9.2.2.26a		–	

### 9.2.2.19d HS-SCCH Power Offset

The *HS-SCCH Power Offset* IE indicates the Power offset relative to the pilot bits on the DL DPCCH.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
HS-SCCH Power Offset			INTEGER (0..255)	Step 0.25 dB, range -32-+31.75 dB

### 9.2.2.19e E-DCH FDD Update Information

The *E-DCH FDD Update Information* IE provides information for E-DCH to be updated. At least one IE shall be presented.

<a href="#">IE/Group name</a>	<a href="#">Presence</a>	<a href="#">Range</a>	<a href="#">IE Type and Reference</a>	<a href="#">Semantic Description</a>	<a href="#">Criticality</a>	<a href="#">Assigned Criticality</a>
<a href="#">E-DCH FDD RL specific update Information</a>		<a href="#">0..&lt;max noofRLs</a> <a href="#">≥</a>				
<a href="#">&gt; E-DCH FDD DL Control Channel Information</a>	<a href="#">O</a>		<a href="#">9.2.2.4D</a>		<a href="#">=</a>	

<a href="#">Range bound</a>	<a href="#">Explanation</a>
<a href="#">maxnoofRLs</a>	<a href="#">Maximum number of RLs for one UE.</a>

### 9.2.2.20 IB\_SG\_POS

First position of an Information Block segment in the SFN cycle (IB\_SG\_POS < IB\_SG\_REP).

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
IB_SG_POS			INTEGER (0..4094)	Only even positions allowed. Reference [16]

### 9.2.2.21 IB\_SG\_REP

Repetition distance for an Information Block segment. The segment shall be transmitted when SFN mod IB\_SG\_REP = IB\_SG\_POS.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
IB_SG_REP			ENUMERATED(4, 8, 16, 32, 64, 128, 256, 512, 1024, 2048, 4096)	Repetition period for the IB segment in frames

### 9.2.2.21a Inner Loop DL PC Status

The *Inner Loop DL PC Status* IE indicates whether inner loop DL control shall be active or inactive for all radio links for the UE Context.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Inner Loop DL PC Status			ENUMERATED(Active, Inactive)	

### 9.2.2.21A Limited Power Increase

The parameter is used for a more efficient use of the inner loop DL power control for non real time data.

If the limited power increase is used, DRNS shall use the limited power increase algorithm as specified in [10], subclause 5.2.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Limited Power Increase			ENUMERATED(Used, Not used , )	

### 9.2.2.21B IPDL FDD Parameters

The *IPDL FDD Parameters* IE provides the information for the IPDL Configuration applied in FDD mode.

IE/Group name	Presence	Range	IE Type and Reference	Semantics Description
IP spacing FDD	M		ENUMERATED(5,7,10,15,20,30,40,50,...)	See [10]
IP length	M		ENUMERATED(5,10,...)	See [10]
IP offset	M		INTEGER(0..9)	See [10]
Seed	M		INTEGER(0..63)	See [10]
Burst mode parameters	O		9.2.1.4B	

### 9.2.2.21C Length of TFCI2

This IE indicates the length measured in number of bits of TFCI(field 2). The length of TFCI (field 1) is set to the 10's complement of the length of TFCI(field 2).

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Length of TFCI2			INTEGER(1..10)	

### 9.2.2.22 Max Adjustment Period

Void.

### 9.2.2.23 Max Adjustment Step

Defines the maximum allowed value for the change of DL power level during a certain number of slots that can be utilised by the downlink power balancing algorithm. *Max Adjustment Step* IE defines a time period, in terms of number of slots, in which the accumulated power adjustments shall be maximum 1 dB. This value does not include the DL inner loop PC adjustment.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Max Adjustment Step			INTEGER(1..10)	Slots

### 9.2.2.24 Max Number of UL DPDCHs

Maximum number of uplink DPDCHs during the connection. Needed by the rate matching algorithm.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Max Number of UL DPDCHs			INTEGER (1..6)	

### 9.2.2.24a CQI Feedback Cycle k

The *CQI Feedback Cycle k* IE provides the duration of the CQI feedback cycle.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
CQI Feedback Cycle k			ENUMERATED (0, 2, 4, 8, 10, 20, 40, 80, 160,...)	Unit ms

### 9.2.2.24b CQI Power Offset

The *CQI Power Offset* IE indicates Power offset used in the UL between the HS-DPCCH slots carrying CQI information and the associated DPCCH.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
CQI Power Offset			INTEGER (0..8,...)	According to mapping in ref. [21] subclause 4.2.1.

### 9.2.2.24c CQI Repetition Factor

The *CQI Repetition Factor* IE indicates the consecutive repetition of the CQI.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
CQI Repetition Factor			INTEGER (1..4,...)	Step: 1

### 9.2.2.24d Measurement Power Offset

The *Measurement Power Offset* IE is used as defined in [10] subclause 6A.2.



IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Measurement Power Offset			INTEGER (-12..26)	Unit: dB Range: -6..13dB Step: 0.5dB

### [9.2.2.24e Max Number of UL E-DPDCHs](#)

[Maximum number of uplink E-DPDCHs during the connection. Needed by the rate matching algorithm.](#)

<a href="#">IE/Group Name</a>	<a href="#">Presence</a>	<a href="#">Range</a>	<a href="#">IE Type and Reference</a>	<a href="#">Semantics Description</a>
<a href="#">Max Number Of UL E-DPDCHs</a>			<a href="#">ENUMERATED (1, 2, 4, ...)</a>	

### 9.2.2.24A Min DL Channelisation Code Length

Void

### 9.2.2.25 Min UL Channelisation Code Length

Minimum UL channelisation code length (spreading factor) of a DPDCH during the connection. Needed by rate matching algorithm.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Min UL Channelisation Code Length			ENUMERATED (4, 8, 16, 32, 64, 128, 256)	

### [9.2.2.25A Min UL Channelisation Code Length for E-DCH FDD](#)

[Minimum UL channelisation code length \(spreading factor\) of a E-DPDCH during the connection. Needed by rate matching algorithm.](#)

<a href="#">IE/Group Name</a>	<a href="#">Presence</a>	<a href="#">Range</a>	<a href="#">IE Type and Reference</a>	<a href="#">Semantics Description</a>
<a href="#">Min UL Channelisation Code Length for E-DCH FDD</a>			<a href="#">ENUMERATED (2, 4, 8, 16, 32, 64, ...)</a>	

### 9.2.2.26 Multiplexing Position

Multiplexing Position specifies whether fixed or flexible positions of transport channels shall be used in the physical channel.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Multiplexing Position			ENUMERATED (Fixed, Flexible)	

### 9.2.2.26a NACK Power Offset

The *NACK Power Offset* IE indicates Power offset used in the UL between the HS-DPCCH slot carrying HARQ NACK information and the associated DPCCH.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
NACK Power Offset			INTEGER (0..8,...)	According to mapping in ref. [21] subclause 4.2.1.

### 9.2.2.26A Number of DL Channelisation Codes

This parameter notifies DRNS of the number of DL channelisation codes required for the Radio Link(s).

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Number of DL Channelisation Codes			INTEGER(1..8)	

### 9.2.2.27 Pattern Duration (PD)

Void

### 9.2.2.27a PC Preamble

Indicates DPDCH power control preamble length see ref. [7].

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
PCP Preamble			INTEGER(0..7,...)	In number of frames.

### 9.2.2.27A PDSCH Code Mapping

This IE indicates the association between each possible value of TFCI(field 2) and the corresponding PDSCH channelisation code. There are three ways which the UTRAN must choose between in order to signal the mapping information, these are described below. The signalling capacity consumed by the different methods will typically vary depending on the way in which the UTRAN configures usage of the DSCH. A fourth option is also provided which allows the UTRAN to replace individual entries in the TFCI(field 2) to PDSCH code mapping table with new PDSCH code values.

Method #1 - Using code range

The mapping is described in terms of a number of groups, each group associated with a given spreading factor. Each TFCI(field2) value corresponds to a given PDSCH channelisation code or set of PDSCH codes for multi-code. The DRNS maps TFCI(field2) values to PDSCH codes in the following way:

- The PDSCH codes used for TFCI(field 2) = 0 are given by the SF of the Code Group 1 (i.e. first instance in *PDSCH code mapping*) and the code numbers between CodeNumber<sub>0</sub> (where CodeNumber<sub>0</sub> = "Start code number" of Code Group 1) and CodeNumber<sub>0</sub> + "multi-code info" - 1.
- This continues with unit increments in the value of TFCI (Field2) mapped to either unit increments in code numbers or groups of contiguous code numbers in case of multi-code, this until "Stop code number" is reached:  
So the PDSCH codes used for TFCI(field 2) = k (for k > 0 and k < ("Stop code number" - "Start code number" + 1) DIV k) are given by the SF of the Code Group 1 and the code numbers between CodeNumber<sub>k</sub> = CodeNumber<sub>k-1</sub> + "multi-code info" and CodeNumber<sub>k</sub> + "multi-code info" - 1.  
If "Stop code number" = "Start code number" + "multi-code info" - 1 then this is to be interpreted as defining the mapping between the channelisation code(s) and a single TFCI.
- The DRNS constructs its mapping table by repeating this process for all the Code Groups in the order they are instantiated in *PDSCH code mapping*. The first TFCI(field 2) value used in each group is the largest TFCI(field 2) value reached in the previous group incremented by one.

Note: This imposes that "Stop code number" – "Start code number" + 1 is a multiple of the value "multi-code info" for each instance of *PDSCH code mapping*. Furthermore, in the case in which multi-code is not used, then "multi-code info" = 1 and the process above also applies.

#### Method #2 - Using TFCI range

The mapping is described in terms of a number of groups, each group corresponding to a given PDSCH channelisation code or set of PDSCH codes for multi-code.

- The set of PDSCH codes specified in the first instance applies for all values of TFCI(field 2) between 0 and the specified "Max TFCI(field2)".
- The process continues in the same way for the following groups with the TFCI(field 2) value starting at the largest value reached in the previous instance incremented by one.  
So the set of PDSCH codes specified in a given instance apply for all the values of TFCI(field 2) between the "Max TFCI(field2) value" specified in the previous instance incremented by one and the specified "Max TFCI(field2)" of the considered instance.

A set of PDSCH codes is composed of all the codes between "Code Number" and "Code Number" + "multicode" – 1. So if multi-code is not used, the set of PDSCH codes is reduced to one element indicated by the *Code Number* IE.

#### Method #3 - Explicit

The mapping between TFCI (field 2) value and PDSCH channelisation code (or a set of PDSCH codes for multicode) is spelt out explicitly for each value of TFCI (field2).

A set of PDSCH codes is composed of all the codes between "Code Number" and "Code Number" + "multicode" – 1. So if multi-code is not used, the set of PDSCH codes is reduced to one element indicated by the *Code Number* IE.

#### Method #4 - Replace

The "TFCI (field2)" value(s) for which the mapping to PDSCH channelisation code (or a set of PDSCH codes for multicode) is changed are explicitly signalled. Furthermore, the new mapping between TFCI(field 2) value and PDSCH channelisation code(s) is spelt out explicitly for each value of TFCI (field2).

A set of PDSCH codes is composed of all the codes between "Code Number" and "Code Number" + "multicode" – 1. So if multi-code is not used, the set of PDSCH codes is reduced to one element indicated by the *Code Number* IE.

IE/Group name	Presence	Range	IE Type and Reference	Semantics Description
DL Scrambling Code	M		9.2.2.1 1	

Choice <i>Signalling Method</i>	M			
> <i>Code Range</i>				
>> <b>PDSCH Code Mapping</b>		1..<maxNo CodeGrou ps>		
>>>Spreading Factor	M		INTEGER (4, 8, 16, 32, 64, 128, 256)	
>>>Multi-code Info	M		INTEGER(1. .16)	
>>>Start Code Number	M		INTEGER(0. .maxCodeNu mComp-1)	PDSCH code start, Numbering as described in [16]
>>>Stop Code Number	M		INTEGER(0. .maxCodeNu mComp-1)	PDSCH code stop, Numbering as described in [16]
> <i>TFCI Range</i>				
>> <b>DSCH Mapping</b>		1..<maxNo TFCIGrou ps>		
>>>Max TFCI(field2) Value	M		INTEGER(1. .1023)	This is the maximum value in the range of TFCI(field 2) values for which the specified PDSCH code applies
>>>Spreading Factor	M		INTEGER (4, 8, 16, 32, 64, 128, 256)	SF of PDSCH code
>>>Multi-code Info	M		INTEGER(1. .16)	
>>>Code Number	M		INTEGER(0. .maxCodeNu mComp-1)	Code number of PDSCH code. Numbering as described in [16]
> <i>Explicit</i>				
>> <b>PDSCH Code</b>		1..<maxTF CI_2_ Com bs>		The first instance of the parameter PDSCH code corresponds to TFCI (field2) = 0, the second to TFCI(field 2) = 1 and so on.
>>>Spreading Factor	M		INTEGER (4, 8, 16, 32, 64, 128, 256)	SF of PDSCH code
>>>Multi-code Info	M		INTEGER(1. .16)	
>>>Code Number	M		INTEGER(0. .maxCodeNu mComp-1)	Code number of PDSCH code. Numbering as described in [16]
> <i>Replace</i>				
>> <b>Replaced PDSCH code</b>		1..<maxTF CI_2_ Com bs>		
>>>TFCI (field2)	M		INTEGER(1. .1023)	Value of TFCI(field 2) for which PDSCH code mapping will be changed
>>>Spreading Factor	M		INTEGER (4, 8, 16, 32, 64, 128, 256)	SF of PDSCH code
>>>Multi-code Info	M		INTEGER(1. .16)	
>>>Code Number	M		INTEGER(0. .maxCodeNu mComp-1)	Code number of PDSCH code. Numbering as described in [16]

Range Bound	Explanation
<i>maxCodeNumComp</i>	Maximum number of codes at the defined spreading factor, within the complete code tree.
<i>maxTFCI_2_Combs</i>	Maximum number of TFCI (field 2) combinations (given by 2 raised to the power of the length of the TFCI field 2)
<i>maxNoTFCIGroups</i>	Maximum number of groups, each group described in terms of a range of TFCI(field 2) values for which a single PDSCH code applies.
<i>maxNoCodeGroups</i>	Maximum number of groups, each group described in terms of a range of PDSCH channelisation code values for which a single spreading factor applies.

### 9.2.2.27B Phase Reference Update Indicator

The *Phase Reference Update Indicator* IE indicates that the phase reference for the radio link needs to be changed.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Phase Reference Update indicator			ENUMERATED (Phase Reference needs to be changed)	

### 9.2.2.28 Power Adjustment Type

Defines the characteristic of the power adjustment.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Power Adjustment Type			ENUMERATED (None, Common, Individual)	

### 9.2.2.29 Power Control Mode (PCM)

Void.

### 9.2.2.30 Power Offset

This IE defines a power offset respect the Downlink transmission power of a DPCH.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Power Offset			INTEGER(0..24)	Unit dB, Step 0.25 dB, range 0-6 dB

### 9.2.2.31 Power Resume Mode (PRM)

Void.

### 9.2.2.31A Preamble Signatures

Void.

### 9.2.2.32 Primary CPICH Ec/No

Energy per chip divided by the power density per band measured on the Primary CPICH by the terminal.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Primary CPICH Ec/No			INTEGER(-30..+30)	Unit dB, step 1 dB The value range is typically within the range of -24 dB to 0 dB according to the CPICH Ec/Io UE measurement defined in ref. [23].

### 9.2.2.32A Primary CPICH Usage For Channel Estimation

The *Primary CPICH Usage For Channel Estimation* IE indicates whether the Primary CPICH may be used for channel estimation or not.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Primary CPICH Usage For Channel Estimation			ENUMERATED (Primary CPICH may be used, Primary CPICH shall not be used)	

### 9.2.2.33 Propagation Delay (PD)

Propagation delay is the one-way propagation delay of the radio signal from the UE to the Node B.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Propagation Delay			INTEGER(0..255)	Unit: Chips. Step: 3 chips. 0=0 chips, 1=3 chips, ...

### 9.2.2.33A PRACH Minimum Spreading Factor

Void.

### 9.2.2.34 QE-Selector

Void.

### 9.2.2.34a Qth Parameter

This parameter indicates the Quality threshold for reliable detection of primary cell ID in SS-DT [10].

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Qth Parameter			INTEGER (-20..0)	Unit dB Range: - 20 .. 0 dB Step 1 dB

### 9.2.2.34A RACH Sub Channel Numbers

Void.

## 9.2.2.35 RL Set ID

The RL Set ID uniquely identifies one RL Set within a UE Context.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
RL Set ID			INTEGER(0..31)	

## 9.2.2.35A Received Total Wide Band Power

The parameter indicates the Received total wide band power in a cell, see ref. [11].

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Received Total Wide Band Power			INTEGER(0..621)	According to mapping in [23].

## 9.2.2.36 S-Field Length

The UE uses the S Field of the UL DPCCH slot to send the SS DT Cell ID to the network.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
S Field Length			ENUMERATED(1, 2,...)	

## 9.2.2.37 Scrambling Code Change

Void.

## 9.2.2.37A Scrambling Code Number

Void.

## 9.2.2.37B Secondary CCPCH Info

The *Secondary CCPCH Info* IE provides information on scheduling of broadcast information for DRAC on a Secondary CCPCH in one cell.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
FDD S-CCPCH Offset	M		9.2.2.15	Corresponds to: $T_{S-CCPCH,k}$ , see ref. [8]	–	
DL Scrambling Code	M		9.2.2.11		–	
FDD DL Channelisation Code Number	M		9.2.2.14		–	
TFCs	M		9.2.1.63	For the DL.	–	
Secondary CCPCH Slot Format	M		9.2.2.38		–	
TFCI Presence	C - SlotFormat		9.2.1.55		–	
Multiplexing Position	M		9.2.2.26		–	
STTD Indicator	M		9.2.2.44		–	
<b>FACH/PCH Information</b>		1 .. <maxFACHcount+1>			–	
>TFS			9.2.1.64	For each FACH, and the PCH when multiplexed on the same Secondary CCPCH	–	
<b>IB Scheduling Information</b>		1			–	
>IB_SG_REP	M		9.2.2.21		–	
<b>&gt;IB Segment Information</b>		1.. <maxIBSEG>			–	
>>IB_SG_POS	M		9.2.2.20		–	

Condition	Explanation
SlotFormat	The IE shall be present if the <i>Secondary CCPCH Slot Format</i> IE is equal to any of the values from 8 to 17.

Range bound	Explanation
maxFACHCount	Maximum number of FACHs mapped onto a Secondary CCPCH.
maxIBSEG	Maximum number of segments for one Information Block.

### 9.2.2.38 Secondary CCPCH Slot Format

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Secondary CCPCH Slot Format			INTEGER(0..17,...)	See ref. [8].

### 9.2.2.38A Secondary CPICH Information

The *Secondary CPICH Information* IE provides the information on the Secondary CPICH when it can be used for channel estimation.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
DL Scrambling Code	M		9.2.2.11	
FDD DL Channelisation Code Number	M		9.2.2.14	



### 9.2.2.38B Secondary CPICH Information Change

The *Secondary CPICH Information Change* IE indicates modification of information of the Secondary CPICH for channel estimation.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
CHOICE <i>Secondary CPICH Information Change</i>	M			
> <i>New Secondary CPICH</i>				
>> <i>Secondary CPICH Information</i>	M		9.2.2.38A	
> <i>Secondary CPICH Shall Not Be Used</i>			NULL	

### 9.2.2.39 Slot Number (SN)

Void

#### 9.2.2.39a Split Type

This parameter indicates if the "Hard" or "Logical" is used for the TFCI split mode.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Split Type			ENUMERATED(Hard, Logical)	<p>"Hard" : meaning that TFCI (field 1) and TFCI (field 2) are each 5 bits long and each field is block coded separately.</p> <p>"Logical" : meaning that on the physical layer TFCI (field 1) and TFCI (field 2) are concatenated, field 1 taking the most significant bits and field 2 taking the least significant bits). The whole is then encoded with a single block code.</p>

#### 9.2.2.39A SRB Delay

Indicates the number of frames after the PC Preamble period during which transmission of data on some RRC Signalling Bearers shall be prohibited by UE in accordance with ref. [16].

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
SRB Delay			INTEGER(0..7,...)	In number of frames.

### 9.2.2.40 SS DT Cell Identity

The SS DT Cell Identity is a temporary ID for SS DT assigned to a cell.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
SS DT Cell Identity			ENUMERATED(a, b, c, d, e, f, g, h)	

### 9.2.2.40A SS DT Cell Identity for EDSCHPC

The SS DT Cell Identity for EDSCHPC is a temporary ID for enhanced DSCH power control assigned to a cell.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
SSDT Cell Identity for EDSCHPC			SSDT Cell Identity 9.2.2.40	

### 9.2.2.41 SS DT Cell Identity Length

The SS DT Cell Identity Length parameter shows the length of the SS DT Cell ID.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
SSDT Cell Identity Length			ENUMERATED(Short, Medium, Long)	

### 9.2.2.42 SS DT Indication

The SS DT Indication indicates whether SS DT is in use by the UE or not.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
SSDT Indication			ENUMERATED(SSDT Active in the UE, SSDT not Active in the UE)	

### 9.2.2.43 SS DT Support Indicator

The SS DT Support Indicator indicates whether a RL supports SS DT or not.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
SSDT Support Indicator			ENUMERATED(SSDT Supported, SSDT not supported).	

### 9.2.2.44 STTD Indicator

Indicates if STTD is active or not.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
STTD Indicator			ENUMERATED(active, inactive)	

### 9.2.2.45 STTD Support Indicator

The STTD Support Indicator indicates whether the STTD can be applied to DL DPCH in the cell or not.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
STTD Support Indicator			ENUMERATED(STTD Supported, STTD not Supported).	

#### 9.2.2.46 TFCI Signalling Mode

This parameter indicates if the normal or split mode is used for the TFCI.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
TFCI Signalling Mode			ENUMERATED(Normal, Split)	

#### 9.2.2.46A TFCI PC Support Indicator

The TFCI PC Support Indicator indicates whether the TFCI power control in the DSCH hard split mode can be applied to DL DPCH in the cell or not. TFCI PC Mode 1 means that the only one power offset(TFCI PO[4]) is applied in TFCI power control. TFCI PC Mode 2 means that the cell also supports enhanced DSCH power control and two power offset(TFCI PO and TFCI PO\_primary[4]) are applied in TFCI power control.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
TFCI PC Support Indicator			ENUMERATED(TFCI PC Mode 1 Supported, TFCI PC Mode 2 Supported)	

#### 9.2.2.47 Transmission Gap Distance (TGD)

Void.

#### 9.2.2.47A Transmission Gap Pattern Sequence Information

Defines the parameters for the compressed mode gap pattern sequence. For details see [16].

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
<b>Transmission Gap Pattern Sequence Information</b>		1..<maxTGPS>		
>TGPSI Identifier	M		INTEGER(1..<MaxTGPS>)	Transmission Gap Pattern Sequence Identifier Establish a reference to the compressed mode pattern sequence. Up to <MaxTGPS> simultaneous compressed mode pattern sequences can be used.
>TGSN	M		INTEGER(0..14)	Transmission Gap Starting Slot Number The slot number of the first transmission gap slot within the TGCFN.
>TGL1	M		INTEGER(1..14)	The length of the first Transmission Gap within the transmission gap pattern expressed in number of slots.
>TGL2	O		INTEGER(1..14)	The length of the second Transmission Gap within the transmission gap pattern. If omitted, then TGL2=TGL1.
>TGD	M		INTEGER (0, 15.. 269)	Transmission gap distance indicates the number of slots between the starting slots of two consecutive transmission gaps within a transmission gap pattern. If there is only one transmission gap in the transmission gap pattern, this parameter shall be set to 0 (0 =undefined).
>TGPL1	M		INTEGER(1..144,...)	The duration of transmission gap pattern 1 in frames.
>TGPL2	O		INTEGER(1..144,...)	The duration of transmission gap pattern 2 in frames. If omitted, then TGPL2=TGPL1.
>UL/DL mode	M		ENUMERATED(UL only, DL only, UL/DL)	Defines whether only DL, only UL, or combined UL/DL compressed mode is used.
>Downlink Compressed Mode Method	C-DL		ENUMERATED(puncturing, SF/2, higher layer scheduling, ...)	Method for generating downlink compressed mode gap
>Uplink Compressed Mode Method	C-UL		ENUMERATED(SF/2, higher layer scheduling, ...)	Method for generating uplink compressed mode gap.
>Downlink Frame Type	M		ENUMERATED(A, B,...)	Defines if frame type 'A' or 'B' shall be used in downlink compressed mode.
>DeltaSIR1	M		INTEGER(0..30)	Delta in SIR target value to be set in the DRNS during the frame containing the start of the first transmission gap in the transmission gap pattern (without including the effect of the bit-rate increase) Step 0.1 dB, Range 0-3dB
>DeltaSIRafter1	M		INTEGER (0..30)	Delta in SIR target value to be set in the DRNS one frame after the frame containing the start of

				the first transmission gap in the transmission gap pattern, Step 0.1 dB, Range 0-3dB
>DeltaSIR2	O		INTEGER (0..30)	Delta in SIR target value to be set in the DRNS during the frame containing the start of the second transmission gap in the transmission gap pattern (without including the effect of the bit-rate increase) When omitted, DeltaSIR2 = DeltaSIR1. Step 0.1 dB, Range 0-3dB
>DeltaSIRafter2	O		INTEGER (0..30)	Delta in SIR target value to be set in the DRNS one frame after the frame containing the start of the second transmission gap in the transmission gap pattern. When omitted, DeltaSIRafter2 = DeltaSIRafter1. Step 0.1 dB, Range 0-3dB

Condition	Explanation
UL	The IE shall be present if the <i>UL/DL mode</i> IE is set to "UL only" or "UL/DL".
DL	The IE shall be present if the <i>UL/DL mode</i> IE is set to "DL only" or "UL/DL".

Range bound	Explanation
<i>maxTGPS</i>	Maximum number of transmission gap pattern sequences.

### 9.2.2.47B Transmission Gap Pattern Sequence Scrambling Code Information

This IE indicates whether or not the alternative scrambling code will be used in the DRNS for the Downlink compressed mode method "SF/2" in the Transmission Gap Pattern Sequence. For details see ref. [16].

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Transmission Gap Pattern Sequence Scrambling Code Information			ENUMERATED (code change, no code change)	Code change = alternative scrambling code will be used.

### 9.2.2.48 Transmit Diversity Indicator

The Transmit Diversity Indicator indicates whether Transmit Diversity shall be active or not.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Transmit Diversity Indicator			ENUMERATED (active, inactive)	

### 9.2.2.49 Transmit Gap Length (TGL)

Void

### 9.2.2.50 Tx Diversity Indicator

The Tx Diversity Indicator indicates if the following conditions are satisfied:

- Primary CPICH is broadcast from two antennas
- STTD is applied to Primary CCPCH
- TSTD is applied to Primary SCH and Secondary SCH

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Tx Diversity Indicator			ENUMERATED(true, false).	

### 9.2.2.50A UE Support Of Dedicated Pilots For Channel Estimation

The *UE Support Of Dedicated Pilots For Channel Estimation* IE indicates whether the UE supports dedicated pilots for channel estimation or not for DCH or DSCH.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
UE Support Of Dedicated Pilots For Channel Estimation			ENUMERATED (Dedicated pilots for channel estimation supported)	

### 9.2.2.50B UE Support Of Dedicated Pilots For Channel Estimation Of HS-DSCH

The *UE Support Of Dedicated Pilots For Channel Estimation Of HS-DSCH* IE indicates whether the UE supports dedicated pilots for channel estimation or not for HS-DSCH.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
UE Support Of Dedicated Pilots For Channel Estimation Of HS-DSCH			ENUMERATED (Dedicated pilots for channel estimation supported)	

### 9.2.2.51 UL/DL Compressed Mode Selection

Void

### 9.2.2.52 UL DPCCH Slot Format

Indicates the slot format used in DPCCH in UL, according to ref. [8].

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
UL DPCCH Slot Format			INTEGER (0..5,...)	

### 9.2.2.53 UL Scrambling Code

The UL Scrambling Code is the scrambling code used by UE. Every UE has its specific UL Scrambling Code.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
UL Scrambling Code Number	M		INTEGER (0.. $2^{24}-1$ )	
UL Scrambling Code Length	M		ENUMERATED (Short, Long)	

#### 9.2.2.54 Uplink Delta SIR

Void

#### 9.2.2.55 Uplink Delta SIR After

Void

#### 9.2.2.56 DPC Mode Change Support Indicator

The *DPC Mode Change Support Indicator* IE indicates that the particular cell is capable to support DPC mode change.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
DPC Mode Change Support Indicator			ENUMERATED (DPC Mode Change Supported)	

CR-Form-v7.1
<b>CHANGE REQUEST</b>
⌘ <b>25.427 CR 95</b> ⌘ rev <b>2</b> ⌘ Current version: <b>6.0.0</b> ⌘

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

**Proposed change affects:** UICC apps  ME  Radio Access Network  Core Network

<b>Title:</b>	⌘ Enhanced Uplink Stage 3 support on lub/lur		
<b>Source:</b>	⌘ RAN3		
<b>Work item code:</b>	⌘ EDCH-lurlub	<b>Date:</b>	⌘ 19/11/2004
<b>Category:</b>	⌘ <b>B</b>	<b>Release:</b>	⌘ Rel-6
	Use <u>one</u> of the following categories: <b>F</b> (correction) <b>A</b> (corresponds to a correction in an earlier release) <b>B</b> (addition of feature), <b>C</b> (functional modification of feature) <b>D</b> (editorial modification) Detailed explanations of the above categories can be found in 3GPP <a href="#">TR 21.900</a> .		Use <u>one</u> of the following releases: Ph2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) Rel-4 (Release 4) Rel-5 (Release 5) Rel-6 (Release 6) Rel-7 (Release 7)

<b>Reason for change:</b>	⌘ Introduction of Enhanced Uplink in the lub/lur User Plane Protocol
<b>Summary of change:</b>	⌘ Introduction of Enhanced Uplink related functions and procedures
<b>Consequences if not approved:</b>	⌘ The lub/lur User Plane Protocol will not support Enhanced Uplink.

<b>Clauses affected:</b>	⌘ 2, 3.2, 4, 4.1, 5.1.0, 5.1.1, 5.1.1a (new), 5.10.1, 5.10.2, 5.11 (new), 6.1, 6.2.2, 6.2.4.10 (new), 6.2.4.11 (new)						
<b>Other specs</b>	<table border="1" style="display: inline-table; vertical-align: middle;"> <tr><td>Y</td><td>N</td></tr> <tr><td>X</td><td></td></tr> </table> Other core specifications	Y	N	X		⌘	25.401 v 6.4.0 CR 94 25.420 v 6.1.0 CR 45 25.423 v 6.3.0 CR 1007 25.430 v 6.2.0 CR 56 25.433 v 6.3.0 CR 1059
Y	N						
X							
<b>affected:</b>	<table border="1" style="display: inline-table; vertical-align: middle;"> <tr><td></td><td>X</td></tr> <tr><td></td><td>X</td></tr> </table> Test specifications O&M Specifications		X		X		
	X						
	X						
<b>Other comments:</b>	⌘						

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Comprehensive information and tips about how to create CRs can be found at <http://www.3gpp.org/specs/CR.htm>. Below is a brief summary:

- 1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.



- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <ftp://ftp.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

---

# 1 Scope

The present document shall provide a description of the UTRAN Iur and Iub interfaces user plane protocols for Dedicated Transport Channel data streams as agreed within the TSG-RAN working group 3.

---

# 2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

- [1] 3GPP TS 25.301: "Radio Interface Protocol Architecture".
- [2] 3GPP TS 25.401: "UTRAN Overall Description".
- [3] 3GPP TS 25.302: "Services provided by the Physical Layer".
- [4] 3GPP TS 25.433: "UTRAN Iub interface NBAP signalling".
- [5] 3GPP TS 25.402: "Synchronization in UTRAN, Stage 2".
- [6] 3GPP TS 25.423: "UTRAN Iur interface RNSAP signalling".
- [7] 3GPP TS 25.215: "Physical layer – Measurements (FDD)".
- [8] 3GPP TS 25.225: "Physical layer – Measurements (TDD)".
- [9] 3GPP TS 25.212: "Multiplexing and channel coding (FDD)".
- [10] 3GPP TS 25.222: "Multiplexing and channel coding (TDD)".
- [11] 3GPP TS 25.224: "Physical Layer Procedures (TDD)".
- [12] 3GPP TS 25.214: "Physical Layer Procedures (FDD)".
- [13] [3GPP TS 25.309: "FDD Enhanced Uplink; Overall description; Stage 2"](#)

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## 3 Definitions and abbreviations

### 3.1 Definitions

For the purposes of the present document, the following terms and definitions apply:

**Transport Bearer:** service provided by the transport layer and used by frame protocol for the delivery of FP PDU

### 3.2 Abbreviations

For the purposes of the present document, the following abbreviations apply:

BER	Bit Error Rate
CFN	Connection Frame Number
CRC	Cyclic Redundancy Checksum
CRCI	CRC Indicator
DCH	Dedicated Transport Channel
DL	Downlink
DPC	Downlink Power Control
DSCH	Downlink Shared Channel
DTX	Discontinuous Transmission
<a href="#">E-DCH</a>	<a href="#">Enhanced DCH</a>
FP	Frame Protocol
FT	Frame Type
<a href="#">HARQ</a>	<a href="#">Hybrid ARQ</a>
LTOA	Latest Time of Arrival
PC	Power Control
QE	Quality Estimate
RL	Radio Link
SIR	Signal-to-Interference Ratio
TB	Transport Block
TBS	Transport Block Set
TFI	Transport Format Indicator
TFCI	Transport Format Combination Indicator
ToA	Time of Arrival
ToAWE	Time of Arrival Window Endpoint
ToAWS	Time of Arrival Window Startpoint
TPC	Transmit Power Control
TTI	Transmission Time Interval
UE	User Equipment
UL	Uplink

### 3.3 Specification Notations

For the purposes of the present document, the following notations apply:

- [FDD] This tagging of a word indicates that the word preceding the tag "[FDD]" applies only to FDD. This tagging of a heading indicates that the heading preceding the tag "[FDD]" and the section following the heading applies only to FDD.
- [TDD] This tagging of a word indicates that the word preceding the tag "[TDD]" applies only to TDD, including 3.84Mcps TDD and 1.28Mcps TDD. This tagging of a heading indicates that the heading preceding the tag "[TDD]" and the section following the heading applies only to TDD, including 3.84Mcps TDD and 1.28Mcps TDD.
- [3.84Mcps TDD] This tagging of a word indicates that the word preceding the tag "[3.84Mcps TDD]" applies only to 3.84Mcps TDD. This tagging of a heading indicates that the heading preceding the tag "[3.84Mcps TDD]" and the section following the heading applies only to 3.84Mcps TDD.

[1.28Mcps TDD]	This tagging of a word indicates that the word preceding the tag "[1.28Mcps TDD]" applies only to 1.28Mcps TDD. This tagging of a heading indicates that the heading preceding the tag "[1.28Mcps TDD]" and the section following the heading applies only to 1.28Mcps TDD.
[FDD - ...]	This tagging indicates that the enclosed text following the "[FDD - " applies only to FDD. Multiple sequential paragraphs applying only to FDD are enclosed separately to enable insertion of TDD specific (or common) paragraphs between the FDD specific paragraphs.
[TDD - ...]	This tagging indicates that the enclosed text following the "[TDD - " applies only to TDD including 3.84Mcps TDD and 1.28Mcps TDD. Multiple sequential paragraphs applying only to TDD are enclosed separately to enable insertion of FDD specific (or common) paragraphs between the TDD specific paragraphs.
[3.84Mcps TDD - ...]	This tagging indicates that the enclosed text following the "[3.84Mcps TDD - " applies only to 3.84Mcps TDD. Multiple sequential paragraphs applying only to 3.84Mcps TDD are enclosed separately to enable insertion of FDD and TDD specific (or common) paragraphs between the 3.84Mcps TDD specific paragraphs.
[1.28Mcps TDD - ...]	This tagging indicates that the enclosed text following the "[1.28Mcps TDD - " applies only to 1.28Mcps TDD. Multiple sequential paragraphs applying only to 1.28Mcps TDD are enclosed separately to enable insertion of FDD and TDD specific (or common) paragraphs between the 1.28Mcps TDD specific paragraphs.
Procedure	When referring to a procedure in the specification, the Procedure Name is written with the first letters in each word in upper case characters followed by the word "procedure", e.g. Timing Adjustment procedure.
Frame	When referring to a control or data frame in the specification, the CONTROL/DATA FRAME NAME is written with all letters in upper case characters followed by the words "control/data frame", e.g. DL SYNCHRONISATION control frame.
IE	When referring to an information element (IE) in the specification, the <i>Information Element Name</i> is written with the first letters in each word in upper case characters and all letters in Italic font followed by the abbreviation "IE", e.g. <i>Connection Frame Number IE</i> .
Value of an IE	When referring to the value of an information element (IE) in the specification, the "Value" is written as it is specified in subclause 6.2.4 or 6.3.3 enclosed by quotation marks, e.g. "0" or "255".

---

## 4 General aspects

The specification of  $I_{ub}$  DCH [and E-DCH](#) data streams is also valid for  $I_{ur}$  DCH [and E-DCH](#) data streams.

The complete configuration of the transport channel is selected by the SRNC and signalled to the Node B via the Iub and Iur control plane protocols.

The parameters of a transport channel are described in [1]. Transport channels are multiplexed on the downlink by the Node B on radio physical channels, and de-multiplexed on the uplink from radio physical channels to transport channels.

In Iur interface, every set of coordinated transport channels related to one UE context that is communicated over a set of cells that are macro-diversity combined within Node B or DRNC, is carried on one transport bearer. This means that there are as many transport bearers as set of coordinated transport channels and Iur DCH data ports for that communication.

In Iub interface, every set of coordinated transport channels related to one UE context that is communicated over a set of cells that are macro-diversity combined within Node B is carried on one transport bearer. This means that there are as many transport bearers as set of coordinated transport channels and Iub DCH data ports for that communication.

Bi-directional transport bearers are used.

## 4.1 DCH and E-DCH FP services

DCH frame protocol provides the following services:

- Transport of TBS across Iub and Iur interface.
- Transport of outer loop power control information between the SRNC and the Node B.
- Support of transport channel synchronisation mechanism.
- Support of node synchronization mechanism.
- Transfer of DSCH TFCI from SRNC to Node B.
- [3.84 Mcps TDD - Transfer of Rx timing deviation from the Node B to the SRNC.]
- Transfer of radio interface parameters from the SRNC to the Node B.

[FDD –

E-DCH frame protocol provides the following services:

- Transport of Mac-es PDUs across Iub and Iur interface from Node B to SRNC.
- Transport of outer loop power control information between the SRNC and the Node B.]

## 4.2 Services expected from the Data Transport Network layer

Following service is required from the transport layer:

- Delivery of FP PDU.

In sequence delivery is not required. However, frequent out-of-sequence delivery may impact the performance and should be avoided.

## 4.3 Protocol Version

This revision of the specification specifies version 1 of the protocol.

# 5 DCH Frame Protocol procedures

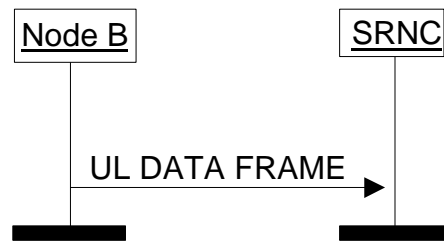
## 5.1 Data Transfer

### 5.1.0 General

When there is some data to be transmitted, DCH data frames are transferred every transmission time interval from the SRNC to the Node B for downlink transfer, and DCH/E-DCH data frames are transferred every transmission time interval from Node B to the SRNC for uplink transfer. [FDD – For 2 ms Uu TTI and depending on configuration from higher layers, the uplink E-DCH Mac-es PDU's from one or more 2ms Uu TTI's may be bundled into one E-DCH Data Frame before being transferred at an interval of e.g. 10ms from the Node B to the SRNC.]

An optional error detection mechanism may be used to protect the data transfer if needed. At the transport channel setup it shall be specified if the error detection on the user data is used.

### 5.1.1 Uplink [for DCH](#)



**Figure 1: Uplink Data Transfer procedure**

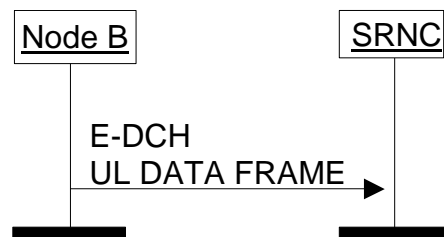
Two modes can be used for the UL transmission: *normal mode* and *silent mode*. The mode is selected by the SRNC when the transport bearer is setup and signalled to the Node B with the relevant control plane procedure.

- In normal mode, the Node B shall always send an UL DATA FRAME to the RNC for all the DCHs in a set of coordinated DCHs regardless of the number of Transport Blocks of the DCHs.
- In silent mode and in case only one transport channel is transported on a transport bearer, the Node B shall not send an UL DATA FRAME to the RNC when it has received a TFI indicating "number of TB equal to 0" for the transport channel during a TTI.
- In silent mode and in case of coordinated DCHs, when the Node B receives a TFI indicating "number of TB equal to 0" for all the DCHs in a set of coordinated DCHs, the Node B shall not send an UL DATA FRAME to the RNC for this set of coordinated DCHs.

For any TTI in which the Node B Layer 1 generated at least one CPHY-Out-of-Sync-IND primitive, the Node B is not required to send an UL DATA FRAME to the SRNC.

When Node B receives an invalid TFCI, no UL DATA FRAME shall be sent to the SRNC.

#### 5.1.1a Uplink for E-DCH [FDD]

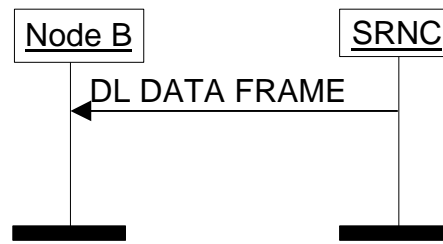


**Figure 1a: Uplink Data Transfer procedure**

When a Mac-e PDU is received, it is demultiplexed into Mac-d flows which are then each sent on separate transport bearers to the RNC using the E-DCH UL DATA FRAME.

Only silent mode is used, i.e. E-DCH user-plane payload is transmitted using the E-DCH UL DATA FRAME only when some payload has been successfully received.

## 5.1.2 Downlink



**Figure 2: Downlink Data Transfer procedure**

The Node B shall only consider a transport bearer synchronised after it has received at least one DL DATA FRAME on this transport bearer before LTOA [5].

The Node B shall consider the DL user plane of a certain RL synchronised once all transport bearers established to carry DCH DL DATA FRAMEs included in the CCTrCH for this RL are considered as synchronised. Once synchronised, the Node B shall assume the DL user plane for this Radio Link stays synchronised as long as the Radio Link exists, even if transport bearers are added (see 5.10.2), replaced (see subclause 5.10.1), or removed. When a RL established through the Radio Link Addition procedure [4] [6] is combined with a RL whose DL user plane is considered as synchronised, the Node B shall consider the DL user plane of this newly established RL as synchronised.

[FDD - The Node B shall transmit on the DL DPDCH(s) of a certain RL only when the DL user plane of this RL is considered synchronised.]

[TDD – The Node B shall transmit special bursts on the DL DPCH as per [11], until the DL user plane is considered synchronised].

When the DL user plane is considered synchronised and the Node B does not receive a valid DL DATA FRAME in a TTI, it assumes that there is no data to be transmitted in that TTI for this transport channel, and shall act as one of the following cases:

- [TDD – If the Node B receives no valid DL DATA FRAMEs for any transport channel assigned to a UE it shall assume DTX and transmit special bursts as per [11]].
- If the Node B is aware of a TFI value corresponding to zero bits for this transport channel, this TFI is assumed. If the TFS contains both a TFI corresponding to "TB length equal to 0 bits" and a TFI corresponding to "number of TB equal to 0", the Node B shall assume the TFI corresponding to "number of TB equal to 0". When combining the TFI's of the different transport channels, a valid TFCI might result and in this case data shall be transmitted on Uu.
- If the Node B is not aware of a TFI value corresponding to zero bits for this transport channel or if combining the TFI corresponding to zero bits with other TFI's, results in an unknown TFI combination, the handling as described in the following paragraph shall be applied.

At each radio frame, the Node B shall build the TFCI value of each CCTrCH, according to the TFI of the DCH data frames multiplexed on this CCTrCH and scheduled for that frame. [FDD - In case the Node B receives an unknown combination of TFIs from the DL DATA FRAMEs, it shall transmit only the DPCH without TFCI bits.] [TDD - In case the Node B receives an unknown combination of DCH DL DATA FRAMEs, it shall apply DTX, i.e. suspend transmission on the corresponding DPCHs.]

## 5.2 Timing Adjustment

The Timing Adjustment procedure is used to keep the synchronization of the DCH data stream in DL direction, i.e. to ensure that the Node B receives the DL frames in an appropriate time for the transmission of the data in the air interface.

SRNC always includes the Connection Frame Number (CFN) to all DCH DL DATA FRAMEs. The same applies to the DSCH TFCI SIGNALLING control frame.

If a DL DATA FRAME or a DSCH TFCI SIGNALLING control frame arrives outside the arrival window defined in the Node B, the Node B shall send a TIMING ADJUSTMENT control frame, containing the measured ToA and the CFN value of the received DL DATA FRAME.

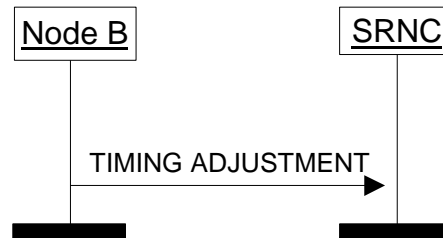


Figure 3: Timing Adjustment procedure

The arrival window and the time of arrival are defined as follows:

**Time of Arrival Window Endpoint (ToAWE):** ToAWE represents the time point by which the DL data shall arrive to the Node B from Iub. The ToAWE is defined as the amount of milliseconds before the last time point from which a timely DL transmission for the identified CFN would still be possible taking into account the Node B internal delays. ToAWE is set via control plane. If data does not arrive before ToAWE a TIMING ADJUSTMENT control frame shall be sent by Node B.

**Time of Arrival Window Startpoint (ToAWS):** ToAWS represents the time after which the DL data shall arrive to the Node B from Iub. The ToAWS is defined as the amount of milliseconds from the ToAWE. ToAWS is set via control plane. If data arrives before ToAWS a TIMING ADJUSTMENT control frame shall be sent by Node B.

**Time of Arrival (ToA):** ToA is the time difference between the end point of the DL arrival window (ToAWE) and the actual arrival time of DL frame for a specific CFN. A positive ToA means that the frame is received before the ToAWE, a negative ToA means that the frame is received after the ToAWE.

The general overview on the Timing Adjustment procedure is reported in [2].

### 5.3 DCH Synchronisation

DCH Synchronisation procedure is used to achieve or restore the synchronisation of the DCH data stream in DL direction, and as a keep alive procedure in order to maintain activity on the Iur/Iub transport bearer.

The procedure is initiated by the SRNC by sending a DL SYNCHRONISATION control frame towards Node B. This control frame indicates the target CFN.

Upon reception of the DL SYNCHRONISATION control frame, Node B shall immediately respond with UL SYNCHRONISATION control frame indicating the ToA for the DL SYNCHRONISATION control frame and the CFN indicated in the received DL SYNCHRONISATION control frame.

UL SYNCHRONISATION control frame shall always be sent, even if the DL SYNCHRONISATION control frame is received by the Node B within the arrival window.

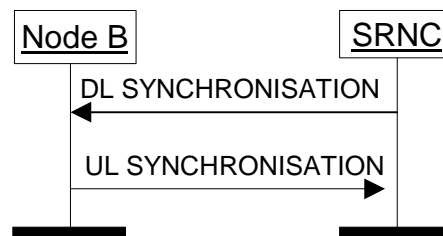


Figure 4: DCH Synchronisation procedure



## 5.4 Outer Loop PC Information Transfer [FDD, 1.28 Mcps TDD]

Based, for example, on the CRCI values and on the quality estimate in the UL DATA FRAME, SRNC modifies the SIR target used by the UL inner loop power control by including the absolute value of the new SIR target in the OUTER LOOP PC control frame sent to the Node B's.

At the reception of the OUTER LOOP PC control frame, the Node B shall immediately update the SIR target used for the inner loop power control [1.28 Mcps TDD - of the respective CCTrCH for UL DCHs] with the specified value.

The OUTER LOOP PC control frame can be sent via any of the transport bearers dedicated to one UE. [1.28 Mcps TDD - In case of multiple CCTrCHs carrying DCHs, the OUTER LOOP PC control frame can be sent via any of the transport bearers carrying DCHs which belong to the CCTrCH for which the UL SIR target shall be adjusted.]

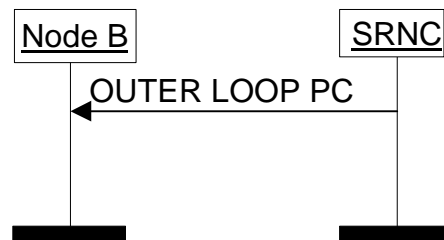


Figure 5: Outer Loop Power Control Information Transfer procedure

## 5.5 Node Synchronisation

The Node Synchronisation procedure is used by the SRNC to acquire information on the Node B timing.

The procedure is initiated by the SRNC by sending a DL NODE SYNCHRONISATION control frame to Node B containing the parameter T1.

Upon reception of a DL NODE SYNCHRONISATION control frame, the Node B shall respond with UL NODE SYNCHRONISATION control frame, including the parameters T2 and T3, as well as the T1 which was indicated in the initiating DL NODE SYNCHRONISATION control frame.

The T1, T2, T3 parameters are defined as:

T1: RNC specific frame number (RFN) that indicates the time when RNC sends the DL NODE SYNCHRONISATION control frame through the SAP to the transport layer.

T2: Node B specific frame number (BFN) that indicates the time when Node B receives the correspondent DL NODE SYNCHRONIZATION control frame through the SAP from the transport layer.

T3: Node B specific frame number (BFN) that indicates the time when Node B sends the UL NODE SYNCHRONISATION control frame through the SAP to the transport layer.

The general overview on the Node Synchronisation procedure is reported in [2].

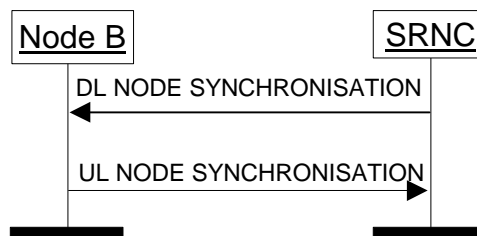


Figure 6: Node Synchronisation procedure

## 5.6 Rx Timing Deviation Measurement [3.84 Mcps TDD]

In case the *Timing Advance Applied* IE indicates "Yes" (see [4]) in a cell, the Node B shall, for all UEs using DCHs, monitor the receiving time of the uplink DPCH bursts arriving over the radio interface, and shall calculate the Rx timing deviation. If the calculated value, after rounding, is not zero, it shall be reported to the SRNC in a RX TIMING DEVIATION control frame belonging to that UE. For limitation of the frequency of this reporting, the Node B shall not send more than one RX TIMING DEVIATION control frame per UE within one radio frame.

If the *Timing Advance Applied* IE indicates "No" (see [4]) in a cell, monitoring of the receiving time of the uplink DPCH bursts is not necessary and no RX TIMING DEVIATION control frame shall be sent.

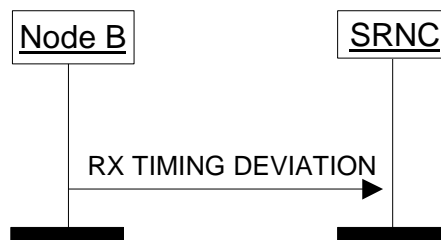


Figure 7: Rx Timing Deviation Measurement procedure

## 5.7 DSCH TFCI Signalling [FDD]

This procedure is used in order to signal to the Node B the TFCI (field 2). This allows the Node B to build the TFCI word(s) which have to be transmitted on the DPCCCH. A transport bearer of any DCH directed to this same UE may be employed for transport over the  $I_{ub}/I_{ur}$ .

The procedure consists in sending the DSCH TFCI SIGNALLING control frame from the SRNC to the Node B. The frame contains the TFCI (field 2) and the correspondent CFN. The DSCH TFCI SIGNALLING control frame is sent once every Uu frame interval (10 ms) for as long as there is DSCH data for that UE to be transmitted in the associated PDSCH Uu frame. In the event that the Node B does not receive a DSCH TFCI SIGNALLING control frame then the Node B shall infer that no DSCH data is to be transmitted to the UE on the associated PDSCH Uu frame and will build the TFCI word(s) accordingly.

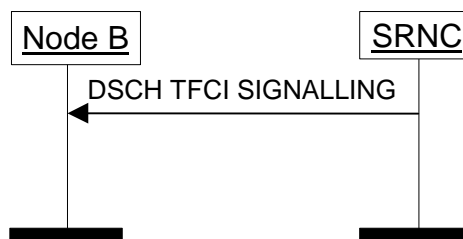
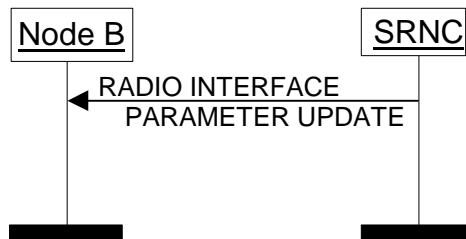


Figure 8: DSCH TFCI Signalling procedure

## 5.8 Radio Interface Parameter Update [FDD]

This procedure is used to update radio interface parameters which are applicable to all RL's for the concerning UE. Both synchronised and unsynchronised parameter updates are supported.

The procedure consists of a RADIO INTERFACE PARAMETER UPDATE control frame sent by the SRNC to the Node B.



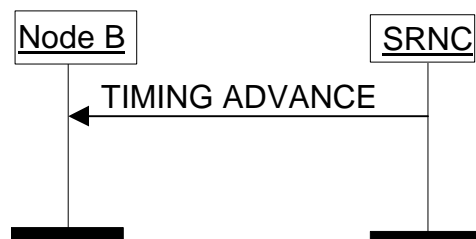
**Figure 9: Radio Interface Parameter Update procedure**

If the RADIO INTERFACE PARAMETER UPDATE control frame contains a valid TPC power offset value, the Node B shall apply the newly provided TPC PO in DL. If the frame contains a valid DPC mode value, the Node B shall apply the newly provided value in DL power control. If the frame contains valid TFCI PO\_primary parameter and cell is decided to be primary, the Node B shall apply the newly provided value in DL TFCI power control. If the frame contains valid TFCI PO parameter, the Node B shall apply the newly provided value in DL TFCI power control. The new values shall be applied as soon as possible in case no valid CFN is included or from the indicated CFN. If the frame contains a valid Multiple RL Sets Indicator value, the Node B may use the newly provided value in Multiple RL Sets Indicator whenever the Node B loses UL synchronization on a RL Set after initial UL synchronization as described in [12].

## 5.9 Timing Advance [3.84 Mcps TDD]

This procedure is used in order to signal to the Node B the adjustment to be performed by the UE in the uplink timing.

The Node B shall use the CFN and timing adjustment values to adjust its layer 1 to allow for accurate impulse averaging.



**Figure 9A: Timing Advance procedure**

## 5.10 General

### 5.10.1 Transport bearer replacement

As described in NBAP [4] and RNSAP [6], transport bearer replacement can be achieved by using the Synchronised Radio Link Reconfiguration Preparation procedure in combination with the Synchronised Radio Link Reconfiguration Commit procedure, or by using the Unsynchronised Radio Link Reconfiguration procedure. In both cases the following steps can be discerned:

- 1) The new transport bearer is established after which 2 transport bearers exist in parallel.
- 2) The transport channel(s) is/are switched to the new transport bearer.
- 3) The old transport bearer is released.

In step 1), communication on the old transport bearer continues as normal. In addition, the Node B shall support DL DATA FRAMES, the DCH Synchronisation procedure (see section 5.3) and the Timing Adjustment procedure (see section 5.2) on the new bearer. This enables the SRNC to determine the timing on the new transport bearer. DL DATA FRAMES transported on the new transport bearer shall not be transmitted on the DL DPDCH before the CFN indicated in the RADIO LINK RECONFIGURATION COMMIT message.

Regarding step 2), the moment of switching is determined differently in the synchronised and unsynchronised case:

- When using the combination of the Synchronised Radio Link Reconfiguration Preparation procedure and the Synchronised Radio Link Reconfiguration Commit procedure, the UL/DL DATA FRAMES shall be transported on the new transport bearer from the CFN indicated in the RADIO LINK RECONFIGURATION COMMIT message.
- When using the Unsynchronised Radio Link Reconfiguration procedure, the Node B shall start using the new transport bearer for the transport of UL DATA FRAMES from the CFN at which the new transport bearer is considered synchronised (i.e. has received a DL DATA FRAME before LTOA [4]).[\[FDD - Not applicable for E-DCH. Change is done directly in case of an E-DCH.\]](#)
- In both cases, starting from this CFN the Node-B shall support all applicable DCH/[E-DCH](#) Frame Protocol procedures on the new transport bearer and no requirements exist regarding support of DCH/[E-DCH](#) Frame Protocol procedures on the old transport bearer.

Finally in step 3), the old transport bearer is released.

## 5.10.2 Transport channel addition

As described in NBAP [4] and RNSAP [6], transport channel addition can be achieved by using the Synchronised Radio Link Reconfiguration Preparation procedure in combination with the Synchronised Radio Link Reconfiguration Commit procedure, or by using the Unsynchronised Radio Link Reconfiguration procedure.

When using the Synchronised Radio Link Reconfiguration Preparation procedure the Node B shall support DL DATA FRAMES, the Synchronisation procedure (see section 5.3) and the Timing Adjustment procedure (see section 5.2) on the new transport bearer also before the CFN indicated in the RADIO LINK RECONFIGURATION COMMIT message, in order to enable the SRNC to determine the timing on the new transport bearer. DL DATA FRAMES transported on the new transport bearer before this CFN shall not be transmitted on the DL DPDCH. Starting from this CFN the Node B shall support all applicable DCH [and E-DCH](#) frame protocol procedures on the new transport bearer.

When using the Unsynchronised Radio Link Reconfiguration procedure the Node B shall support data frames and control frames when the new transport bearer is established.

## [5.11 Generation of subframe number \[FDD\]](#)

[The CFN and Subframe Number IE's values in the E-DCH Data Frame shall reflect the CFN and subframe number when the payload in the E-DCH Data Frame was received on the Uu. The subframe number is for 2 ms TTI set to values {0-4} and for 10 ms TTI set to {0}.](#)

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# 6 Frame structure and coding

## 6.1 General

The general structure of a DCH FP frame consists of a header and a payload. The structure is depicted in figure 9B.



**Figure 9B: General structure of a frame protocol PDU**

The header contains a CRC checksum, the frame type field and information related to the frame type.

There are two types of DCH FP frames (indicated by the *FT* IE):

- DCH data frame.
- [DCH control frame.](#)

[\[FDD -](#)

[For the UL direction there is also an E-DCH data frame \(indicated by signalling\)](#)

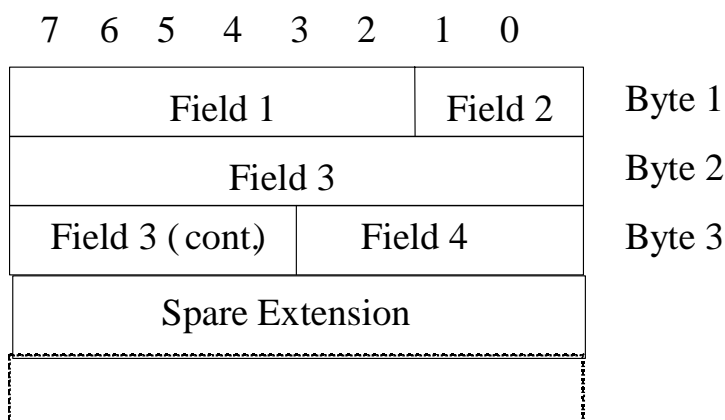
[- E-DCH data frame.\]](#)

The payload of the data frames contains radio interface user data, quality information for the transport blocks and for the radio interface physical channel during the transmission time interval (for UL only), and an optional CRC field.

The payload of the control frames contains commands and measurement reports related to transport bearer and the radio interface physical channel but not directly related to specific radio interface user data.

### 6.1.1 General principles for the coding

In the present document the structure of frames will be specified by using pictures similar to figure 10.



**Figure 10: Example of notation used for the definition of the frame structure**

Unless otherwise indicated, fields which consist of multiple bits within a byte will have the more significant bit located at the higher bit position (indicated above frame in figure 10). In addition, if a field spans several bytes, more significant bits will be located in lower numbered bytes (right of frame in figure 10).

On the Iub/Iur interface, the frame will be transmitted starting from the lowest numbered byte. Within each byte, the bits are sent according decreasing bit position (bit position 7 first).

The parameters are specified giving the value range and the step (if not 1). The coding is done as follows (unless otherwise specified):

- Unsigned values are binary coded.
- Signed values are coded with the 2's complement notation.

Bits labelled "Spare" shall be set to zero by the transmitter and shall be ignored by the receiver. The *Spare Extension* IE indicates the location where new IEs can in the future be added in a backward compatible way. The *Spare Extension* IE shall not be used by the transmitter and shall be ignored by the receiver.

## 6.2 Data frames

### 6.2.1 Introduction

The purpose of the user data frames is to transparently transport the transport blocks between Node B and SRNC.

The protocol allows for multiplexing of coordinated dedicated transport channels, with the same transmission time interval, onto one transport bearer.

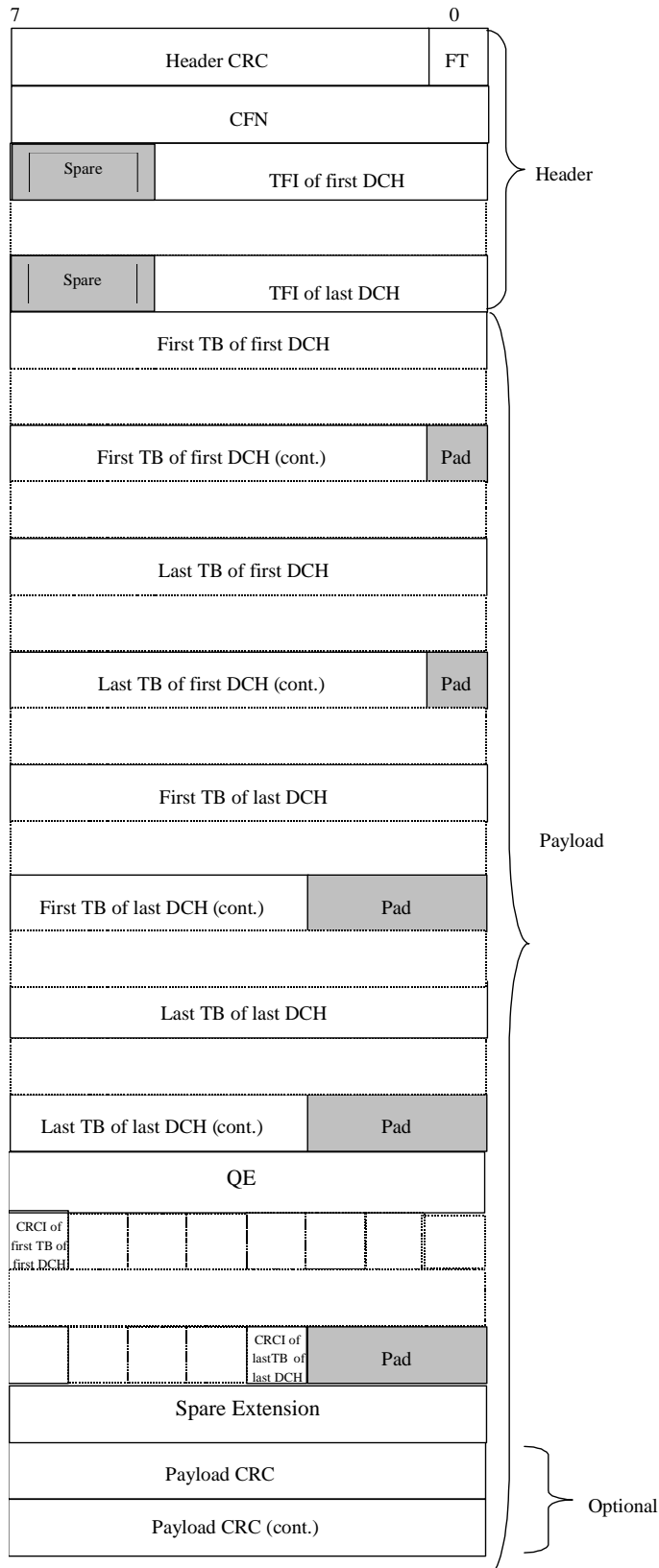
The transport blocks of all the coordinated DCHs for one transmission time interval are included in one frame.

SRNC indicates the multiplexing of coordinated dedicated transport channels in the appropriate RNSAP/NBAP message.

## 6.2.2 UL DATA FRAME

### 6.2.2.1 UL DATA FRAME FOR DCH

The structure of the UL DATA FRAME is shown in figure 11.



**Figure 11: UL DATA FRAME structure**

For the description of the fields see subclause 6.2.4.

There are as many TFI fields as number of DCH multiplexed in the same transport bearer.

The DCHs in the frame structure are ordered from the lower DCH id ('first DCH') to the higher DCH id ('last DCH').

The size and the number of TBs for each DCH are defined by the correspondent TFI.

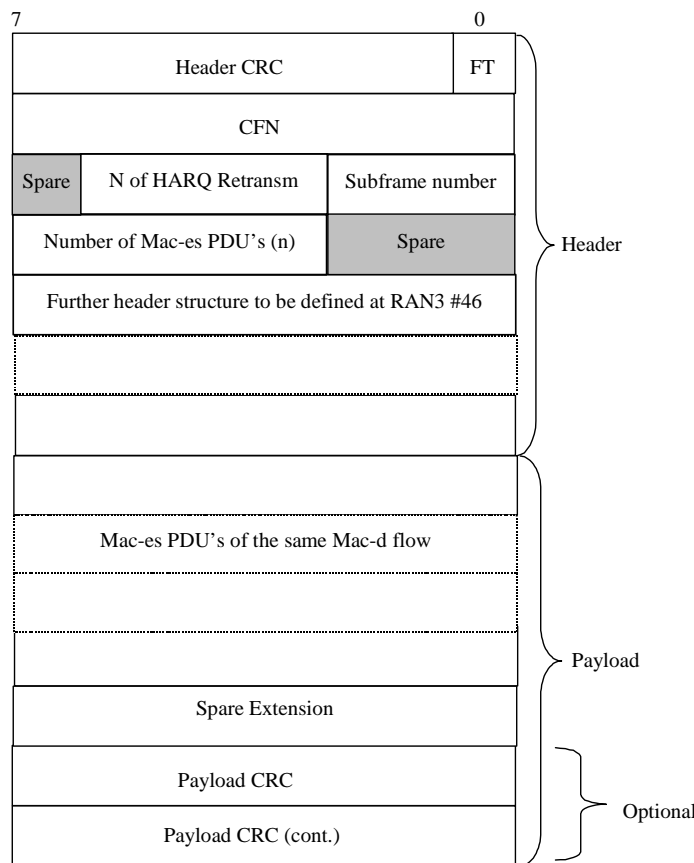
If the TB does not fill an integer number of bytes, then bit padding is used as shown in the figure in order to have the octet aligned structure (ex: a TB of 21 bits requires 3 bits of padding).

There is a CRCI for each TB included in the frame irrespective of the size of the TB, i.e. the CRCI is included also when the TB length is zero. If the CRCIs of one data frame do not fill an integer number of bytes, then bit padding is used as shown in the figure in order to have the octet aligned structure (ex. 3 CRCI bits require 5 bits of padding, but there are no CRCI bits and no padding, when the number of TBs is zero).

The *Payload CRC* IE is optional, i.e. the whole 2 bytes field may or may not be present in the frame structure (this is defined at the setup of the transport bearer).

### 6.2.2.2 UL DATA FRAME FOR E-DCH [FDD]

The structure of the E-DCH UL DATA FRAME is shown in Figure 11a.



**Figure 11a: E-DCH UL DATA FRAME structure**

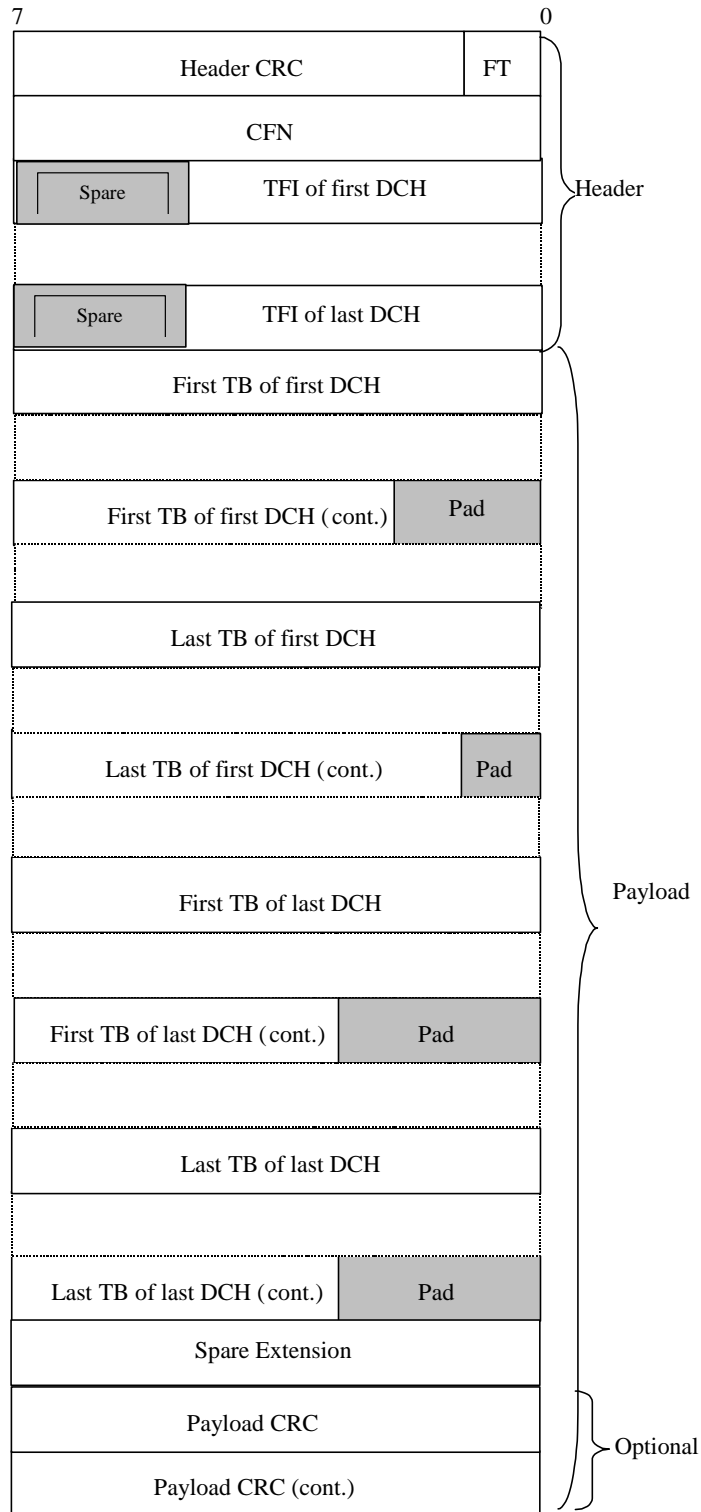
For the description of the fields see subclause 6.2.4.

The *Payload CRC* IE is optional, i.e. the whole 2 bytes field may or may not be present in the frame structure (this is defined at the setup of the transport bearer).

### 6.2.3 DL DATA FRAME

The structure of the DL DATA FRAME is shown in figure 12.





**Figure 12: DL DATA FRAME structure**

For the description of the fields see subclause 6.2.4.

There are as many TFI fields as number of DCH multiplexed in the same transport bearer.

The DCHs in the frame structure are ordered from the lower DCH id ('first DCH') to the higher DCH id ('last DCH').

The size and the number of TBs for each DCH is defined by the correspondent TFI.

If the TB does not fill an integer number of bytes, then bit padding is used as shown in the figure in order to have the octet aligned structure (ex: a TB of 21 bits requires 3 bits of padding).

The *Payload CRC* IE is optional, i.e. the whole 2 bytes field may or may not be present in the frame structure (this is defined at the setup of the transport bearer).

## 6.2.4 Coding of information elements in data frames

### 6.2.4.1 Header CRC

**Description:** Result of the CRC applied to the remaining part of the header, i.e. from bit 0 of the first byte, (the *FT* IE) to the bit 0 (included) of the last byte of the header) with the corresponding generator polynomial:  
 $G(D) = D^7 + D^6 + D^2 + 1$ . See subclause 7.2.

**Field Length:** 7 bits.

### 6.2.4.2 Frame Type (FT)

**Description:** Describes if it is a control frame or a data frame.

**Value range:** {0=data, 1=control}.

**Field Length:** 1 bit.

### 6.2.4.3 Connection Frame Number (CFN)

**Description:** Indicator as to which radio frame the first data was received on uplink or shall be transmitted on downlink. See [2].

**Value range:** {0-255}.

**Field length:** 8 bits.

### 6.2.4.4 Transport Format Indicator (TFI)

**Description:** TFI is the local number of the transport format used for the transmission time interval. For information about what the transport format includes see [3].

**Value range:** {0-31}.

**Field length:** 5 bits.

### 6.2.4.5 Quality Estimate (QE)

**Description:** The quality estimate is derived from the transport channel BER [FDD - or physical channel BER.]

[FDD - If the DCH FP frame includes TB's for the DCH which was indicated as "selected" with the *QE-selector* IE in the control plane [4] [6], then the QE is the transport channel BER for the selected DCH. If no transport channel BER is available the QE is the physical channel BER.]

[FDD - If the value of the *QE-Selector* IE equals "non-selected" for all DCHs in the DCH FP frame, then the QE is the physical channel BER.]

[TDD - If no transport channel BER is available, then the QE shall be set to 0. This is in particular the case when no transport blocks have been received. The value of QE will be ignored by the RNC in this case.]

The quality estimate shall be set to the transport channel BER [FDD - or physical channel BER] and be measured in the units TrCh\_BER\_LOG [FDD - and PhCh\_BER\_LOG respectively] (see [7] and [8]). The quality estimate is needed in order to select a transport block when all CRC indications are showing bad (or good) frame. The UL outer loop power control may also use the quality estimate.

**Value range:** {0-255}.

**Granularity:** 1.

**Field length:** 8 bits.

#### 6.2.4.6 Transport Block (TB)

**Description:** A block of data to be transmitted or received over the air interface. The transport format indicated by the TFI describes the transport block length and transport block set size. See [3].

**Field length:** The length of the TB is specified by the TFI.

#### 6.2.4.7 CRC indicator (CRCI)

**Description:** Indicates the correctness/incorrectness of the TB CRC received on the Uu interface. For every transport block included in the data frame a CRCI bit will be present, irrespective of the presence of a TB CRC on the Uu interface. If no CRC was present on the Uu for a certain TB, the corresponding CRCI bit shall be set to "0".

**Value range:** {0=Correct, 1=Not Correct}.

**Field length:** 1 bit.

#### 6.2.4.8 Payload CRC

**Description:** CRC for the payload. This field is optional. It is the result of the CRC applied to the remaining part of the payload, i.e. from the bit 7 of the first byte of the payload to the bit 0 of the byte of the payload before the *Payload CRC* IE, with the corresponding generator polynomial:  
 $G(D) = D^{16} + D^{15} + D^2 + 1$ . See clause 7.2.

**Field length:** 16 bits.

#### 6.2.4.9 Spare Extension

**Description:** Indicates the location where new IEs can in the future be added in a backward compatible way.

**Field length:** 0-32 octets.

#### 6.2.4.10 Subframe Number [FDD]

**Description:** Indicates the subframe number in which the payload was received.

**Value range:** {0-4}

**Field length:** 3 bits.

#### 6.2.4.11 Number of HARQ Retransmissions, NHR [FDD]

**Description:** Indicates the number of HARQ retransmissions used for successful decoding of the payload.

**Field length:** 4 bits.

## CHANGE REQUEST

# 25.430 CR 56 # rev 2 # Current version: 6.2.0 #

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the # symbols.

**Proposed change affects:** UICC apps  ME  Radio Access Network  Core Network

<b>Title:</b>	# Introduction of E-DCH in TS 25.430		
<b>Source:</b>	# RAN3		
<b>Work item code:</b>	# EDCH-lublub	<b>Date:</b>	# 19/11/2004
<b>Category:</b>	# <b>B</b>	<b>Release:</b>	# Rel-6
	<p>Use <u>one</u> of the following categories:</p> <p><b>F</b> (correction)</p> <p><b>A</b> (corresponds to a correction in an earlier release)</p> <p><b>B</b> (addition of feature),</p> <p><b>C</b> (functional modification of feature)</p> <p><b>D</b> (editorial modification)</p> <p>Detailed explanations of the above categories can be found in 3GPP <a href="#">TR 21.900</a>.</p>		<p>Use <u>one</u> of the following releases:</p> <p>Ph2 (GSM Phase 2)</p> <p>R96 (Release 1996)</p> <p>R97 (Release 1997)</p> <p>R98 (Release 1998)</p> <p>R99 (Release 1999)</p> <p>Rel-4 (Release 4)</p> <p>Rel-5 (Release 5)</p> <p>Rel-6 (Release 6)</p> <p>Rel-7 (Release 7)</p>

<b>Reason for change:</b>	# To introduce the E-DCH feature to the lub General Aspects and Principles Technical Specification
<b>Summary of change:</b>	<p># The E-DCH feature is introduced.</p> <p>Section 2: Reference to 25.309 added.</p> <p>Section 3.2: E-DCH definition added.</p> <p>Section 4.4.xx: Description of E-DCH data stream added.</p> <p>Section 4.5.1: Mapping of E-DCH data stream added.</p> <p>Section 6.1: Logical model of Node B figure updated to include E-DCH.</p> <p>Section 6.2.1: E-DCH MAC-d flow descriptions added.</p> <p>Section 6.2.3.xx: Traffic Termination Point updated to include E-DCH and E-DCH Data Port added.</p> <p>Section 7: E-DCH Frame Protocol added to lub Interface Protocol Structure figure.</p> <p>In general all changes are tagged as FDD only.</p> <p>Revision 1:</p> <p>Editorial Changes.</p> <p>Section 4.4.xx revised to include HARQ retransmission and re-ordering details.</p> <p>Section 5.2.6.1 revised to include details of mandatory combining in the Node B.</p> <p>Section 5.2.6.4 revised to include HARQ retransmission details.</p>

Impact assessment towards the previous version of the specification (same release):

There is no impact due to E-DCH being a new feature.

**Consequences if not approved:** ⌘ E-DCH will not be possible over the lub interface.

**Clauses affected:** ⌘ 2, 3.2, 4.4.xx (new), 4.5.1, 5.2.6.1, 5.2.6.4, 6.1, 6.2.1, 6.2.3.xx (new), 7

	Y	N		
<b>Other specs</b>	X		Other core specifications	⌘ 25.423 v 6.3.0 CR 1007 25.433 v 6.3.0 CR 1059 25.401 v 6.4.0 CR 94 25.420 v 6.1.0 CR 45 25.427 v 6.0.0 CR 95
<b>affected:</b>		X	Test specifications	
		X	O&M Specifications	

**Other comments:** ⌘

**How to create CRs using this form:**

Comprehensive information and tips about how to create CRs can be found at <http://www.3gpp.org/specs/CR.htm>. Below is a brief summary:

- 1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <ftp://ftp.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

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## Foreword

This Technical Specification (TS) has been produced by the 3<sup>rd</sup> Generation Partnership Project (3GPP).

The contents of the present document are subject to continuing work within the TSG and may change following formal TSG approval. Should the TSG modify the contents of the present document, it will be re-released by the TSG with an identifying change of release date and an increase in version number as follows:

Version x.y.z

where:

- x the first digit:
  - 1 presented to TSG for information;
  - 2 presented to TSG for approval;
  - 3 or greater indicates TSG approved document under change control.
- y the second digit is incremented for all changes of substance, i.e. technical enhancements, corrections, updates, etc.
- z the third digit is incremented when editorial only changes have been incorporated in the document.

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# 1 Scope

The present document is an introduction to the TSG RAN TS 25.43x series of UMTS Technical Specifications that define the Iub Interface. The Iub interface is a logical interface for the interconnection of Node B and Radio Network Controller (RNC) components of the UMTS Terrestrial Radio Access Network (UTRAN) for the UMTS system.

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# 2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

- [1] 3GPP TS 25.401: "UTRAN Overall Description".
  - [2] 3GPP TS 25.442: "UTRAN Implementation Specific O&M transport".
  - [3] 3GPP TS 25.432: "UTRAN Iub interface signalling transport".
  - [4] 3GPP TS 25.302: "Services Provided by the Physical Layer".
  - [5] 3GPP TS 25.431: "UTRAN Iub Interface: Layer 1".
  - [6] 3GPP TS 25.432: "UTRAN Iub Interface: Signalling Transport".
  - [7] 3GPP TS 25.433: "NBAP Specification".
  - [8] 3GPP TS 25.434: "UTRAN Iub Interface: Data Transport & Transport Signalling for Common Transport Channel Data Streams".
  - [9] 3GPP TS 25.435: "UTRAN Iub Interface: User Plane Protocols for Common Transport Channel Data Streams".
  - [10] 3GPP TS 25.426: "UTRAN Iur/Iub Interface: Data Transport & Transport Signalling for DCH Data Streams".
  - [11] 3GPP TS 25.427: "UTRAN Iur/Iub Interface: User Plane Protocol for DCH Data Streams".
  - [12] 3GPP TS 25.402: "Synchronization in UTRAN, Stage 2".
  - [13] ITU-T Recommendation Q.2630.1 (12/99): "AAL type 2 Signalling Protocol (Capability Set 1)".
- [\[xx14\] 3GPP TS 25.3509: "FDD Enhanced Uplink; Overall description; Stage 2".](#)

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# 3 Definitions and abbreviations

## 3.1 Definitions

For the purposes of the present document, the following terms and definitions apply:

**Propagation delay (PD):** it is the round trip propagation delay of the radio signal from the Node B to the UE and back to the BS in one chip resolution.

**Timing Advance (TA):** it is the amount of time, expressed in number of chips, by which the transmission of an uplink burst is anticipated by the UE in order to be received by the cell inside the corresponding time slot.

## 3.2 Abbreviations

For the purposes of the present document, the following abbreviations apply:

AAL2	ATM Adaptation Layer type 2
AAL5	ATM Adaptation Layer type 5
AICH	Acquisition Indication Channel
ALCAP	Access Link Control Application Part
AP-AICH	Access Preamble Acquisition Indication Channel
ATM	Asynchronous Transfer Mode
BCH	Broadcast Channel
BCCH	Broadcast Control Channel
CCH	Control Channel
CD/CA-ICH	Collision Detection/Channel Assignment Indication Channel
CPCH	Common Packet Channel
CPCId	Common Physical Channel Identifier
CPICH	Common Pilot Channel
CSICH	Common Packet Channel Status Indication Channel
CTCId	Common Transport Channel Identifier
CRNC	Controlling Radio Network Controller
DCH	Dedicated Transport Channel
DPCCH	Dedicated Physical Control Channel
DPCH	Dedicated Physical Channel
DRNC	Drift Radio Network Controller
DSCH	Down-link Shared Channel
<u>E-DCH</u>	<u>Enhanced Dedicated <del>Transport</del> Channel</u>
FACH	Forward Access Channel
FAUSCH	Fast Up-link Signalling Channel
FDD	Frequency Division Duplex
FP	Frame Protocol
<u>HARQ</u>	<u>Hybrid Automatic Repeat Request</u>
HS-DSCH	High Speed Downlink Shared Channel
IP	Internet Protocol
NBAP	Node B Application Part
O&M	Operation and Maintenance
PICH	Page Indication Channel
PCCH	Paging Control Channel
PCCPCH	Primary Common Control Physical Channel
PCPCH	Physical Common Packet Channel
PCPICH	Primary Common Pilot Channel
PCH	Paging Channel
PDSCH	Physical Downlink Shared Channel
PRACH	Physical Random Access Channel
PUSCH	Physical Uplink Shared Channel
RACH	Random Access Channel
RNC	Radio Network Controller
RNS	Radio Network Subsystem
SCCP	Signalling Connection Control Part
SCH	Synchronization Channel
SCCPCH	Secondary Common Control Physical Channel
SCPICH	Secondary Common Pilot Channel
SCTP	Stream Control Transmission Protocol
SRNC	Serving Radio Network Controller
SSCF-UNI	Service Specific Co-ordination Function - User Network Interface
SSCOP	Service Specific Connection Oriented Protocol
TDD	Time Division Duplex
UE	User Equipment
UC-ID	UTRAN Cell Identifier



UDP	User Datagram Protocol
UMTS	Universal Mobile Telecommunication System
USCH	Up-link Shared Channel
UTRAN	UMTS Terrestrial Radio Access Network

### 3.3 Specification Notations

For the purposes of the present document, the following notations apply:

[FDD]	This tagging of a word indicates that the word preceding the tag "[FDD]" applies only to FDD. This tagging of a heading indicates that the heading preceding the tag "[FDD]" and the section following the heading applies only to FDD.
[TDD]	This tagging of a word indicates that the word preceding the tag "[TDD]" applies only to TDD, including 3.84Mcps TDD and 1.28Mcps TDD. This tagging of a heading indicates that the heading preceding the tag "[TDD]" and the section following the heading applies only to TDD, including 3.84Mcps TDD and 1.28Mcps TDD.
[3.84Mcps TDD]	This tagging of a word indicates that the word preceding the tag "[3.84Mcps TDD]" applies only to 3.84Mcps TDD. This tagging of a heading indicates that the heading preceding the tag "[3.84Mcps TDD]" and the section following the heading applies only to 3.84Mcps TDD.
[1.28Mcps TDD]	This tagging of a word indicates that the word preceding the tag "[1.28Mcps TDD]" applies only to 1.28Mcps TDD. This tagging of a heading indicates that the heading preceding the tag "[1.28Mcps TDD]" and the section following the heading applies only to 1.28Mcps TDD.
[FDD - ...]	This tagging indicates that the enclosed text following the "[FDD - " applies only to FDD. Multiple sequential paragraphs applying only to FDD are enclosed separately to enable insertion of TDD specific (or common) paragraphs between the FDD specific paragraphs.
[TDD - ...]	This tagging indicates that the enclosed text following the "[TDD - " applies only to TDD, including 3.84Mcps TDD and 1.28Mcps TDD. Multiple sequential paragraphs applying only to TDD are enclosed separately to enable insertion of FDD specific (or common) paragraphs between the TDD specific paragraphs.
[3.84Mcps TDD - ...]	This tagging indicates that the enclosed text following the "[3.84Mcps TDD - " applies only to 3.84Mcps TDD. Multiple sequential paragraphs applying only to 1.28Mcps TDD are enclosed separately to enable insertion of FDD and TDD specific (or common) paragraphs between the 3.84Mcps TDD specific paragraphs.
[1.28Mcps TDD - ...]	This tagging indicates that the enclosed text following the "[1.28Mcps TDD - " applies only to 1.28Mcps TDD. Multiple sequential paragraphs applying only to 1.28Mcps TDD are enclosed separately to enable insertion of FDD and TDD specific (or common) paragraphs between the 1.28Mcps TDD specific paragraphs.
Procedure	When referring to a procedure in the specification the Procedure Name is written with the first letters in each word in upper case characters followed by the word "procedure", e.g. Radio Network Layer procedures.
Message	When referring to a message in the specification the MESSAGE NAME is written with all letters in upper case characters followed by the word "message", e.g. RADIO LINK SETUP REQUEST message.
Frame	When referring to a control or data frame in the specification the CONTROL/DATA FRAME NAME is written with all letters in upper case characters followed by the words "control/data frame", e.g. DCH transport frame.

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## 4 General Aspects

### 4.1 Introduction

The logical interface between a RNC and a Node B is called the Iub interface.

### 4.2 Iub Interface General Principles

The general principles for the specification of the Iub interface are as follows:

- Transmission sharing between the GSM/GPRS Abis interface and the Iub interface shall not be precluded.
- The functional division between RNC and Node B shall have as few options as possible.
- Iub should be based on a logical model of Node B.
- Node B controls a number of cells and can be ordered to add/remove radio links in those cells.
- Neither the physical structure nor any internal protocols of the Node B shall be visible over Iub and are thus not limiting factors, e.g., when introducing future technology.
- Only the logical O&M [1] of Node B is supported by the Iub.
- Complex functionality shall as far as possible be avoided over Iub. Advanced optimisation solutions may be added in later versions of the standard.
- The Iub functional split shall take into account the probability of frequent switching between different channel types.

### 4.3 Iub Interface Specification Objectives

The I<sub>ub</sub> interface specifications shall facilitate the following:

- Inter-connection of RNCs and Node Bs from different manufacturers.
- Separation of I<sub>ub</sub> interface Radio Network functionality and Transport Network functionality to facilitate introduction of future technology.

The Iub parts to be standardised are:

1. User data transport.
2. Signalling for handling the user data.
3. Node B Logical O&M [1].

Note: It should be possible to transport the Implementation Specific O&M [1] interface via the same transport bearer as the Iub interface and, hence, the lower layer transport mechanisms should be standardised to this effect. The application level content of the Implementation Specific O&M interface is out of scope of UTRAN standardization. Where the implementation specific O&M interface shares the same bearer as the Iub interface, the transport layers shall be as specified in [2] and [3] respectively.

### 4.4 Iub Interface Capabilities

#### 4.4.1 Radio application related signalling

The Iub interface allows the RNC and the Node B to negotiate about radio resources, for example to add and delete cells controlled by the Node B to support communication of the dedicated connection between UE and SRNC.

Information used to control the broadcast channel and information to be transported on the broadcast channel belongs to this category also. In addition, logical O&M [1] between the Node B and RNC shall also be included in this category.

#### 4.4.2 Iub/Iur DCH data stream

The Iub interface provides the means for transport of uplink and downlink DCH transport frames between RNC and Node B. An Iub/Iur DCH data stream corresponds to the data carried on one DCH transport channel.

In the UTRAN, one DCH data stream always corresponds to a bi-directional transport channel. Although the TFS is configured separately for each DCH direction and a DCH could be configured with e.g. only a zero-bit transport format in one direction, the DCH is always treated as a bi-directional transport channel in the UTRAN. As a result, two uni-directional Uu DCH transport channels with opposite directions can be mapped to either one or two DCH transport channels in the UTRAN.

#### 4.4.3 Iub RACH data stream

The Iub interface provides the means for transport of uplink RACH transport frames between Node B and RNC. An Iub RACH data stream corresponds to the data carried on one RACH transport channel.

#### 4.4.4 Iub CPCH data stream [FDD]

The Iub interface provides the means for transport of uplink CPCH transport frames between Node B and RNC.

#### 4.4.5 Iub FACH data stream

The Iub interface provides the means for transport of downlink FACH transport frames between RNC and Node B. An Iub FACH data stream corresponds to the data carried on one FACH transport channel.

#### 4.4.6 Iub DSCH data stream

The Iub interface provides the means for transport of downlink shared channel, DSCH, data frames between RNC and Node B. An Iub DSCH data stream corresponds to the data carried on one DSCH transport channel for one UE. A UE may have multiple DSCH data streams.

#### 4.4.7 Iub USCH data stream [TDD]

The Iub interface provides the means for transport of uplink shared channel, USCH, data frames between Node B and RNC. An Iub USCH data stream corresponds to the data carried on one USCH transport channel for one UE. A UE may have multiple USCH data streams.

#### 4.4.8 Iub PCH data stream

The Iub interface provides the means for transport of PCH transport frames between RNC and Node B. An Iub PCH data stream corresponds to the data carried on one PCH transport channel.

#### 4.4.9 Iub FDD TFCI2 data stream

The Iub interface provides the means for transport of control frames between DRNC and Node B. An Iub TFCI2 data stream corresponds to the TFCI2 signalling for one Node B communication context that is using one or more DSCH transport channels. A Node B communication context may be assigned up to one TFCI2 data stream.

#### 4.4.10 Iub HS-DSCH data stream

The Iub interface provides the means for transport of high speed downlink shared channel, HS-DSCH, data frames between RNC and Node B. An Iub HS-DSCH data stream corresponds to the data carried on one MAC-d flow for one UE. A UE may have multiple HS-DSCH data streams.

## 4.4.xx1 Iub E-DCH data stream [FDD]

The Iub interface provides the means for transport of uplink E-DCH transport frames between Node B and RNC. An Iub E-DCH data stream corresponds to the data carried on one MAC-d flow for one UE. A UE may have multiple E-DCH data streams.

In addition, the interface provides the following:

- A means for the Node B to indicate the number of HARQ retransmissions to the SRNC [11];
- A means to indicate to the SRNC, for the purposes of re-ordering, the CFN and Subframe Number that have been added by the Node B [11].

## 4.5 Iub Interface Characteristics

### 4.5.1 Mapping of Iub data streams

- DCH** One Iub DCH data stream is carried on one transport bearer. For each DCH data stream a transport bearer must be established over Iub, except in the case of coordinated DCHs in which case a set of coordinated DCHs are multiplexed onto the same transport bearer.
- [FDD - CPCH]** One Iub CPCH data stream is carried on one transport bearer. For each CPCH in a cell, an Iub CPCH data stream must be established over the Iub interface.]
- RACH** One Iub RACH data stream is carried on one transport bearer. For each RACH in a cell, a transport bearer must be established over the Iub interface.
- FACH** One Iub FACH data stream is carried on one transport bearer. For each FACH in a cell, a transport bearer must be established over the Iub Interface.
- DSCH** One Iub DSCH data stream is carried on one transport bearer. For each DSCH data stream, a transport bearer must be established over the Iub interface.
- HS-DSCH** One Iub HS-DSCH data stream is carried on one transport bearer. For each HS-DSCH data stream, a transport bearer must be established over the Iub interface.
- [FDD - TFCI2]** One Iub TFCI2 data stream is carried on one transport bearer.]
- [FDD - E-DCH]** One Iub E-DCH data stream is carried on one transport bearer. For each E-DCH data stream, a transport bearer must be established over the Iub interface.]
- [TDD - USCH]** One Iub USCH data stream is carried on one transport bearer. For each USCH data stream, a transport bearer must be established over the Iub interface.]
- PCH** One Iub PCH data stream is carried on one transport bearer.

## 4.6 Iub Protocols

There shall exist a clear separation between the radio network layer and the transport layer. Therefore, the radio network signalling and Iub data streams are separated from the data transport resource and traffic handling as shown in figure 1. This resource and traffic handling is controlled by the Transport Signalling. The Transport Signalling is carried by a Signalling Bearer over the Iub interface.

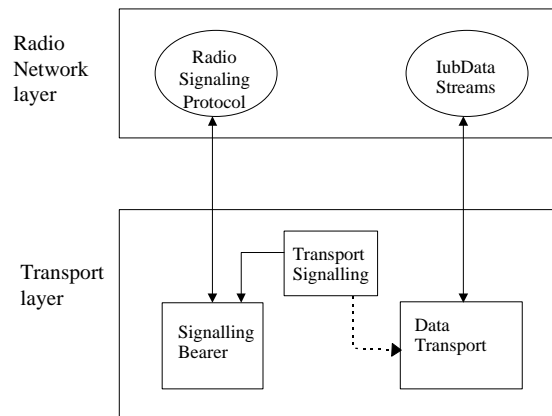


Figure 1: Separation of Radio Network protocols and transport over Iub

## 5 Functions of the I<sub>ub</sub> Interface Protocols

### 5.1 Iub Functions

The list of functions on the Iub interface is the following:

1. Management of Iub Transport Resources;
2. Logical O&M of Node B:
  - Iub Link Management;
  - Cell Configuration Management;
  - Radio Network Performance Measurements;
  - Resource Event Management;
  - Common Transport Channel Management;
  - Radio Resource Management;
  - Radio Network Configuration Alignment;
3. Implementation Specific O&M Transport;
4. System Information Management;
5. Traffic Management of Common Channels:
  - Admission Control;
  - Power Management;
  - Data Transfer;
6. Traffic Management of Dedicated Channels:
  - Radio Link Management;
  - Radio Link Supervision;
  - Channel Allocation / De-allocation;
  - Power Management;
  - Measurement Reporting;

- Dedicated Transport Channel Management;
  - Data Transfer;
7. Traffic Management of Shared Channels:
- Channel Allocation / De-allocation;
  - Power Management;
  - Transport Channel Management;
  - Dynamic Physical Channel Assignment;
  - Radio Link Management;
  - Data Transfer;
8. Timing and Synchronization Management:
- Transport Channel Synchronization (Frame synchronization);
  - Node B - RNC node Synchronization;
  - Inter Node B node Synchronization.

## 5.2 Functional split over Iub

### 5.2.1 Management of Iub Transport Resources

The underlying transport resources (AAL2 and UDP/IP transport bearers) shall be set up and controlled by the RNC. Further information on these functions is provided in the transport layer specifications [3], [8], [10].

### 5.2.2 Logical O&M of Node B

Logical O&M is the signalling associated with the control of logical resources (channels, cells,...) owned by the RNC but physically implemented in the Node B. The RNC controls these logical resources. A number of O&M procedures physically implemented in Node B impact on the logical resources and therefore require an information exchange between RNC and Node B. All messages needed to support this information exchange are classified as Logical O&M forming an integral part of NBAP over the Iub interface.

#### 5.2.2.1 Handling of Node B Hardware Resources

Mapping of Node B logical resources onto Node B hardware resources, used for Iub data streams and radio interface transmission/reception, is performed by Node B.

### 5.2.3 Implementation Specific O&M Transport

The Iub interface may support the transport of Implementation specific O&M information. Further detail on this can be found in the UMTS technical specification on Implementation Specific O&M Transport [2].

### 5.2.4 System Information Management

System Information is sent by the CRNC to a Node B. CRNC can also request the Node B to autonomously create and update certain Node B related system information. Scheduling of system broadcast information is carried out in the CRNC. Scheduling information is always sent by the CRNC to the Node B. The Node B is responsible for transmitting the received system information according to the scheduling parameters provided. If requested by the CRNC, the Node B is also responsible for autonomously creating and updating the Node B related system information according to the scheduling parameters provided.

## 5.2.5 Traffic management of Common Channels

The common channels need to be controlled from the RNC. This is typically the control of the RACH, CPCH [FDD] and FACH channels, the information that is broadcast on the Broadcast control channel, and the control and request for sending information on the paging channels.

## 5.2.6 Traffic management of Dedicated Channels

These functions are related to the activation of logical resources (e.g. Radio Links, Iub ports), and the connection of these various resources together.

[FDD - Some freedom may be left for Node B implementation on some functions like soft combining within Node B, since soft combining has merits for being executed as close as possible to the radio (both in terms of transmission cost and efficiency).]

### 5.2.6.1 Combining/Splitting and Control

Node B may perform combining/splitting of [DCH](#) data streams communicated via its cells. RNC performs combining/splitting of Iub data streams received from/sent to several Node B(s).

The UL combining of information streams may be performed using any suitable algorithm, for example:

- [FDD - based on maximum ratio algorithm (maximum ratio combining)];
- [FDD - based on quality information associated to each TBS (selection-combining)];
- [TDD - based on the presence/absence of the signal (selection)].

When requesting the addition of a new cell for a UE-UTRAN connection, the RNC can explicitly request to the Node B a new Iub data stream, in which case the combining and splitting function within the Node B is not used for that cell. Otherwise, the Node B takes the decision whether combining and splitting function is used inside the Node B for that cell i.e. whether a new Iub data stream shall be added or not.

The internal Node B handling of the combining/splitting of radio frames is controlled by the Node B.

[\[FDD - For E-DCH combining of UL streams in the Node B is mandatory as described in \[xx\].\]](#)

### 5.2.6.2 Handover Decision

To support mobility of the UE to UTRAN connection between cells, UTRAN uses measurement reports from the UE and detectors at the cells.

The RNC takes the decision to add or delete cells from the connection.

### 5.2.6.3 Allocation of Physical Channel Resources

In FDD allocation of downlink channelisation codes of cells belonging to Node B is performed in the CRNC.

In TDD allocation of uplink and downlink physical channel resources of cells belonging to Node B is performed in the CRNC.

### 5.2.6.4 UpLink Power Control

This function controls the level of the transmitted power in order to minimise interference and keep the quality of the connections. The function uplink Outer Loop Power Control located in the SRNC sets the target quality for the uplink Inner Loop Power Control function, [for E-DCH \[FDD\] the Node B reports the number of HARQ retransmissions to the SRNC as an input to the Outer Loop Power Control function](#). In FDD and 1.28Mcps TDD, Inner Loop Power Control Function is located in Node B, while in 3.84Mcps TDD it is located in the UE.

### 5.2.6.5 Down-Link Power Control

This function controls the level of the downlink transmitted power. In FDD it is also used to correct the downlink power drifting between several radio links. A SRNC regularly (or under some algorithms) shall send the target down link power range based on the measurement report from UE.

### 5.2.6.6 Admission Control

The Admission Control function based on uplink interference and downlink power is located in the CRNC.

Node B shall report uplink interference measurements and downlink power information over the Iub.

The CRNC controls this reporting function, i.e. if this information needs to be reported and the period of these reports.

### 5.2.6.7 Power and Interference Reporting

A threshold for reporting may be given to Node B from the CRNC to prevent frequent reporting over the Iub. Node B shall have a function to measure "uplink interference level and downlink TX Power" and a function to compare the averaged "uplink interference level and downlink TX power" with the threshold value. Node B shall also have a function to report when the average measured value exceeds the threshold value. The CRNC shall have a function to modify the "threshold value" for neighbour cell co-ordination.

An indication of exceeding uplink interference threshold or downlink TX power may be included as a cause of failure when a Node B is requested to set-up a radio link or add to an existing radio link. This may be used when a number of radio links set-up requests or additions are received on the Iub during the reporting interval.

## 5.2.7 Traffic management of Shared Channels

The shared channels shall be controlled from the RNC. This is typically the control of the DSCH channels and the TDD USCH channels.

### 5.2.7A Traffic management of High Speed Shared Channels

The high speed shared channels shall be controlled from the Node B. This includes the control of the HS-DSCH channels as well as the required control channels on the radio interface.

## 5.2.8 Timing and Synchronization Management

The Iub interface shall support timing and synchronization management functions. Further detail regarding these functions can be found in the UMTS technical specification on UTRAN synchronization [12].

# 6 Node B logical Model over Iub

## 6.1 Overview

The model described in figure 2 shows the Node B as seen from the controlling RNC. The model includes:

- The logical resources provided by Node B to UTRAN (via its Controlling RNC) - depicted as "cells" which include the physical channel resources DPCH, PDSCH, and PUSCH;
- The dedicated channels which have been established on Node B;
- The common transport channels that Node B provides to the RNC.

The procedures for controlling the connections between radio links and Iub DCH data ports are sent from the RNC to the Node B via the Communication Control Ports.



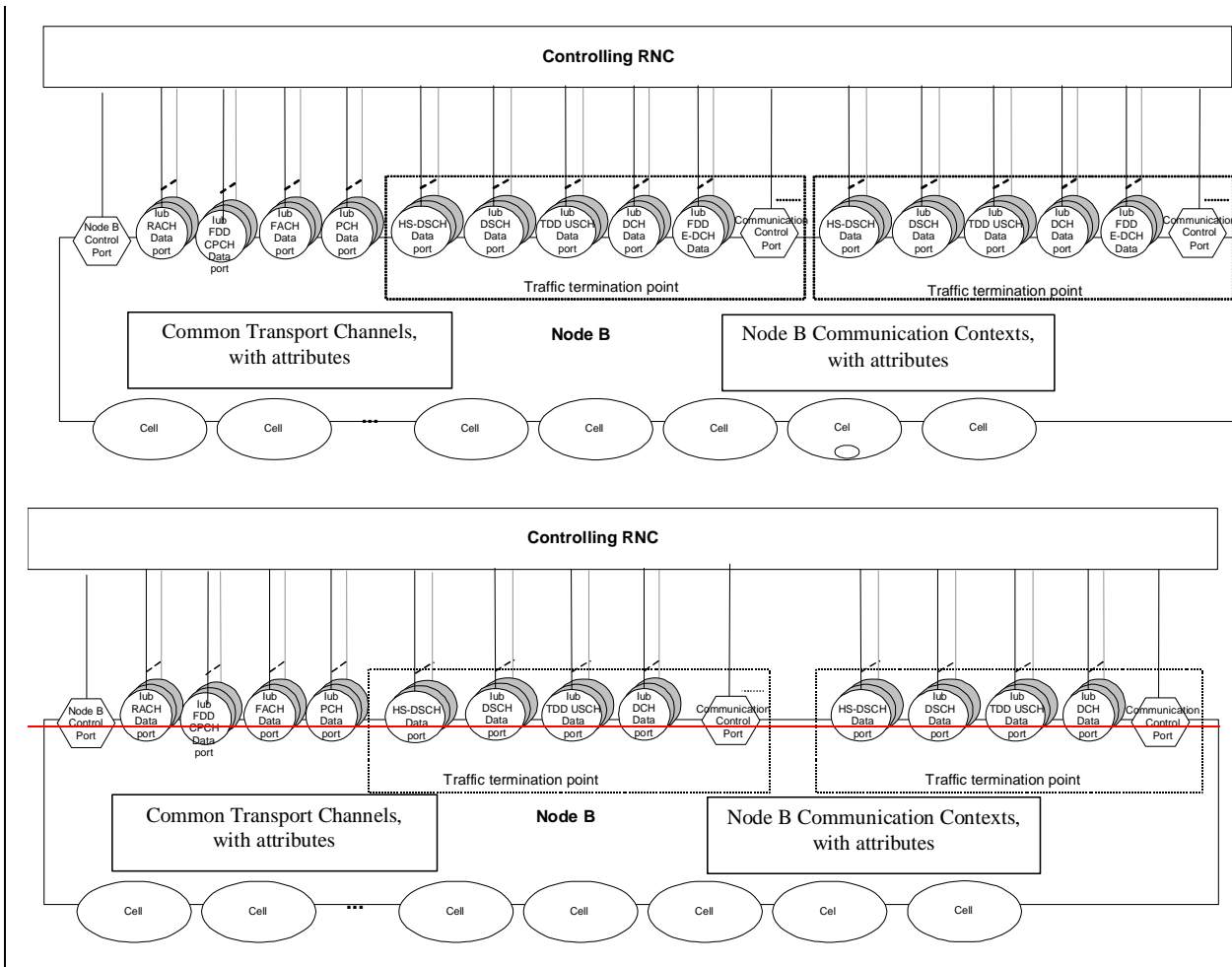


Figure 2: Logical Model of Node B

## 6.2 Elements of the logical model

### 6.2.1 Node B Communication Contexts for Dedicated and Shared Channels

A Node B Communication Context corresponds to all the dedicated resources that are necessary for a user in dedicated mode and using dedicated and/or shared channels as restricted to a given Node B. [TDD - The Node B Communication Context also exists for users in Cell\_FACH mode (i.e. non-dedicated mode) provided a USCH and/or DSCH and/or HS-DSCH has been allocated to these users.]

There are a number of Node B Communication Contexts inside a given Node B.

The attributes to a Node B Communication Context shall include the following (not exhaustive):

- The list of Cells where dedicated and/or shared physical resources are used.
- The list of DCH which are mapped on the dedicated physical resources for that Node B Communication Context.
- The list of DSCH and USCH [TDD] which are used by the respective UE.
- The list of HS-DSCH MAC-d flows which are used by the respective UE.
- [\[FDD - The list of E-DCH MAC-d flows which are used by the respective UE.\]](#)
- The complete DCH characteristics for each DCH, identified by its DCH-identifier [4].

- The complete Transport Channel characteristics for each DSCH and USCH, identified by its Shared Channel identifier [4].
- The complete HS-DSCH characteristics for each HS-DSCH MAC-d Flow, identified by its HS-DSCH MAC-d Flow identifier[4].
- [\[FDD - The complete E-DCH characteristics for each E-DCH MAC-d Flow, identified by its E-DCH MAC-d Flow identifier\[4\].\]](#)
- The list of Iub DCH Data Ports.
- The list of Iub DSCH Data ports and Iub USCH data ports.
- The list of Iub HS-DSCH Data ports.
- [\[FDD - The list of Iub E-DCH Data ports.\]](#)
- [FDD - Up to one Iub TFCI2 data port.]
- For each Iub DCH Data Port, the corresponding DCH and cells which are carried on this data port.
- For each Iub DSCH and USCH data port, the corresponding DSCH or USCH and cell which serves that DSCH or USCH.
- For each Iub HS-DSCH data port, the corresponding HS-DSCH data stream and cell which serves that HS-DSCH data stream.
- Physical layer parameters (outer loop power control, etc).

## 6.2.2 Common Transport Channels

Common Transport Channels are defined in [9]. A Common Transport Channel is configured in the Node B, on request of the CRNC.

The BCH is carried directly on the Node B control port using NBAP procedures. This Common Channel will not be mapped to an individual data port.

The RACH has an associated Iub RACH Data Port and the FACH has an associated Iub FACH Data Port.

[FDD - The CPCH has an associated Iub CPCH Data Port.]

The Iub DSCH data port is associated to one DSCH and to one Node B Communication Context.

[TDD - the Iub USCH data port is associated to one USCH and to one Node B Communication Context.]

The attributes of a Common transport channel shall include (not exhaustive):

- Type (RACH, CPCH [FDD], FACH, DSCH, USCH [TDD], PCH).
- Associated Iub RACH Data Port for a RACH, Iub CPCH Data Port for a CPCH [FDD], Iub FACH Data Port for a FACH, Iub PCH Data Port for the PCH.
- [FDD - List of associated Iub FDD DSCH Data ports for the DSCH.]
- Physical parameters.

[TDD - The DSCHs used by one UE are multiplexed to one or several CCTrCHs where each CCTrCH is mapped to a set of PDSCH ("PDSCH Set"). These PDSCH Sets are included in the Common Transport Channel data base. The same applies for the USCHs and the corresponding PUSCH Sets.]

## 6.2.3 Transport network logical resources

### 6.2.3.1 Node B Control Port

The Node B Control Port is used to exchange the signalling information for the logical O&M of Node B, the creation of Node B Communication Contexts, the configuration of the common transport channels that Node B provides in a given cell, PCH and BCH control information between the RNC and the Node B. The Node B Control Port corresponds to one signalling bearer between the controlling RNC and the Node B. There is one Node B Control Port per Node B.

### 6.2.3.2 Communication Control Port

A Communication Control Port corresponds to one signalling bearer between the RNC and Node B for the control of Node B Communication Contexts. One signalling bearer between RNC and Node B can at most correspond to one Communication Control Port. Node B may have multiple Communication Control Ports (one per Traffic Termination Point). The Communication Control Port is selected at creation of the Node B Communication Context. The Communication Control Port is re-selected when the signalling bearer for the control of Node B Communication is rearranged.

### 6.2.3.3 Traffic Termination Point

Traffic Termination Point represents DCH, DSCH, HS-DSCH, ~~and~~ USCH [TDD] and E-DCH [FDD] data streams belonging to one or more Node B Communication Contexts (UE contexts), which are controlled via one Communication Control Port. The Traffic Termination Point is thus a descriptive entity which neither is controlled over Iub nor by O&M.

### 6.2.3.4 Iub DCH Data Port

One Iub DCH Data port represents one user plane transport bearer. One user plane transport bearer will carry only one DCH data stream except in the case of coordinated DCHs, in which case the data streams of all combined DCHs shall be multiplexed on one and the same user plane transport bearer.

### 6.2.3.5 Iub RACH Data Port

An Iub RACH Data Port represents a user plane bearer carrying one Iub RACH Data Stream between the Node B and the RNC. There is one RACH Data Port for each RACH channel of Node B.

### 6.2.3.6 Iub CPCH Data Port [FDD]

An Iub CPCH Data Port represents a user plane bearer carrying one Iub CPCH Data Stream between the Node B and the RNC. There is one CPCH Data Port for each CPCH channel of Node B.

### 6.2.3.7 Iub FACH Data Port

An Iub FACH Data Port represents a user plane bearer carrying one Iub FACH Data Stream between the Node B and the RNC. There is one FACH Data Port for each FACH channel of Node B.

### 6.2.3.8 Iub DSCH Data Port

An Iub DSCH Data Port represents a user plane bearer carrying one Iub DSCH Data Stream between the Node B and the RNC. For each DSCH, that is used by an individual UE, there is one Iub DSCH Data Port per Node B exclusively assigned to the communication context of that UE. In FDD each DSCH is associated with a downlink DPCCH.

### 6.2.3.8A Iub HS-DSCH Data Port

An Iub HS-DSCH Data Port represents a user plane bearer carrying one Iub HS-DSCH Data Streams between the Node B and the RNC.

### 6.2.3.9 Iub TDD USCH Data Port

An Iub USCH Data Port represents a user plane bearer carrying one Iub USCH Data Stream between the Node B and the RNC. For each USCH, that is used by an individual UE, there is one Iub USCH Data Port with data exclusively assigned to the Node B communication context of that UE.

### 6.2.3.10 Iub PCH Data Port

An Iub PCH Data Port represents an Iub PCH Data Stream between the Node B and the RNC.

### 6.2.3.11 Iub FDD TFCI2 Data Port

An Iub TFCI2 Data Port represents a user plane bearer carrying the TFCI2 data stream between the Node B and the DRNC. For each individual Node B communication context, there may be up to one Iub TFCI2 Data Port.

### [6.2.3.xx~~12~~](#) Iub E-DCH Data Port [FDD]

[An Iub E-DCH Data Port represents a user plane bearer carrying one Iub E-DCH Data Stream between the Node B and the RNC.](#)

## 6.2.4 Radio Network Logical resources

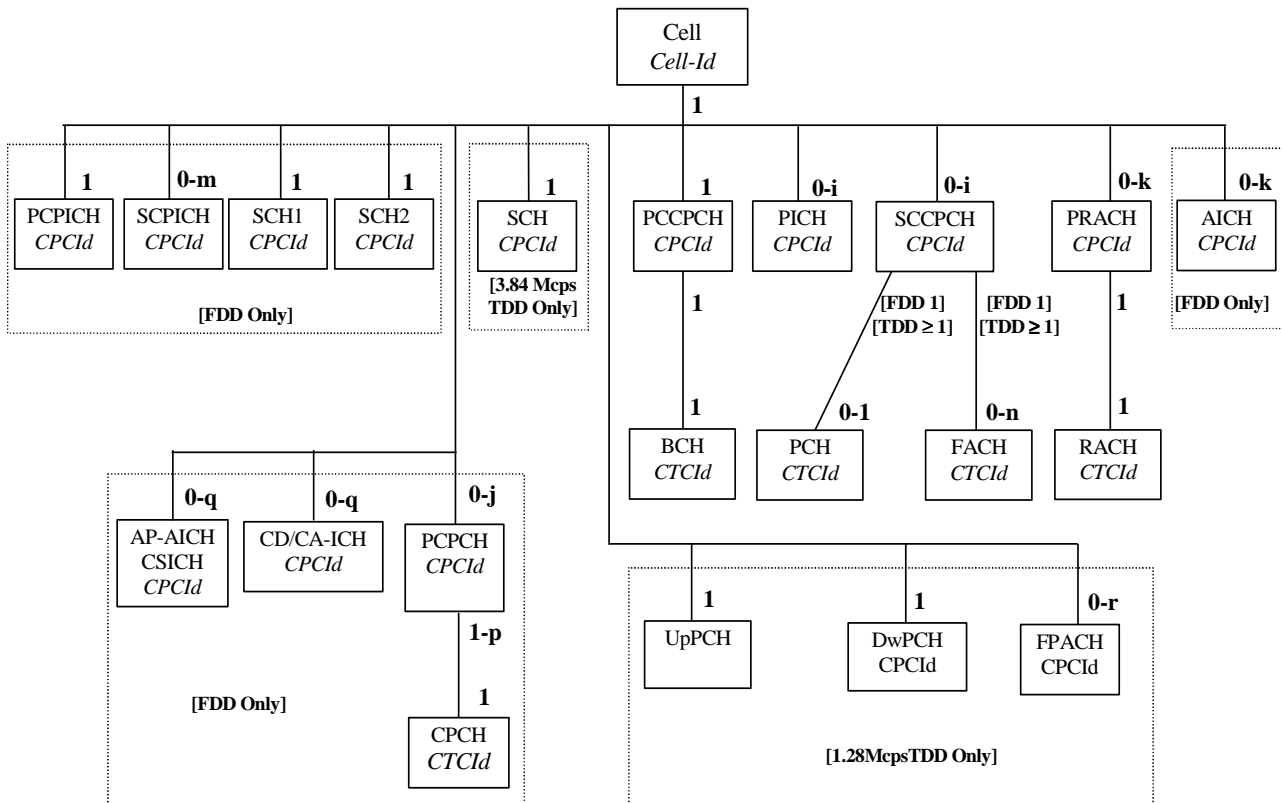
### 6.2.4.1 Common Resources

The CRNC manages logical radio network resources in Node B and needs to use both common and dedicated resources in a Node B to run a radio network. Therefore, it is the CRNC that orders the Node B to configure, reconfigure and delete these resources. However, if the equipment in Node B cannot fully support the configuration that the CRNC requests, or the equipment breaks down, then Node B can indicate the availability of the common resources (i.e. both downgrade and upgrade).

The common resources are the Cell, the common physical channels and the common transport channels.

In Node B these common resources have an operational state, that indicates whether they are operational or not, i.e. whether they can carry traffic or not.

Figure 3 shows the common resources that a CRNC is managing in a Node B to be able to run a radio network.



The number or range above each box indicates how many of the channels named in that box can exist as "children" under one instant of a "parent" box to which the "child" box is connected.

The number or range beneath each box indicates how many of the channels named in that box can exist as "parent" boxes for one instant of a "child" channel to which the "parent" box is connected.

CPCId = Common Physical Channel Identifier

CTCId = Common Transport Channel Identifier

[TDD - The number of PICH = the number of PCH]

[FDD - The number of AICH = the number of PRACH]

[TDD – PCH and FACHs can be mapped on one or more SCCPCH]

**Figure 3: Common resources in a Node B that are managed by the CRNC**

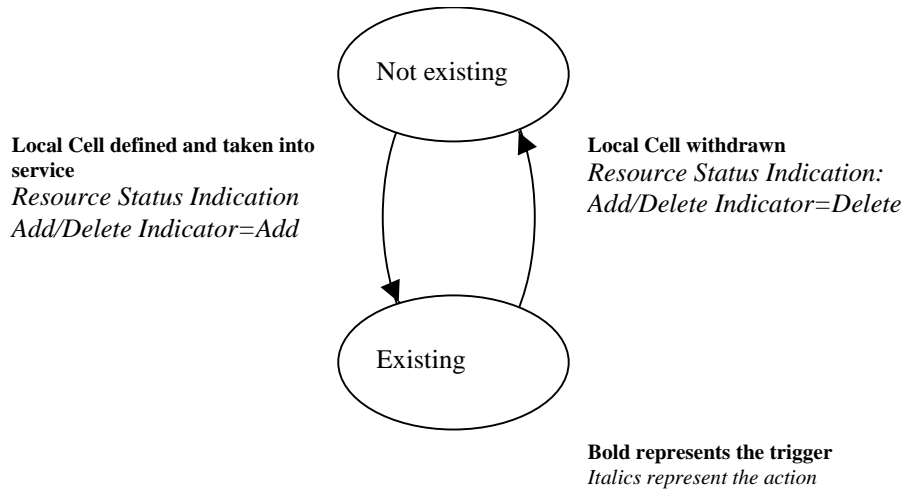
### 6.2.4.2 Cell

A Cell is identified by a UTRAN Cell identifier (UC-id) [1].

The semantics of a Cell include the following:

- The Cell can be created and removed by administrative procedures. When a Local Cell, i.e. equipment in a Node B, is made available to the CRNC for configuration of a cell, the CRNC can configure the cell with configuration data, common physical channels and common transport channels in Node B. In so doing a Local cell is added to the RNS.
- If any Iub transport bearers for common or dedicated transport channels exist when the cell is deleted, the Node B shall initiate the release of those transport bearers.
- Node B may support one or more cells.
- Configuration of a cell over the Iub interface cannot be successful unless Node B has reported a Local Cell Id [1] as available to the CRNC.
- Once a Local Cell is configured to support a cell, it cannot be deleted without the CRNC first deleting the cell.

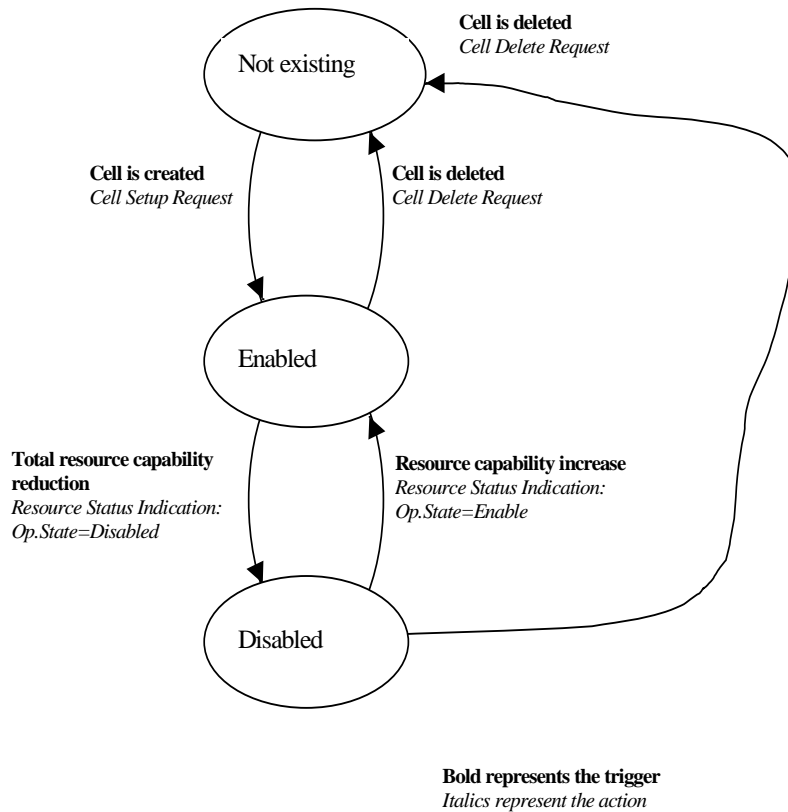
Figure 4 illustrates the state diagram for a Local Cell in Node B, as seen over the Iub interface.



**Figure 4: States for a Local Cell that are seen over the Iub interface**

Cells in Node B have a resource operational state.

Figure 5 illustrates the state diagram for the states of a cell, as seen over the Iub interface.



**Figure 5: States for a cell in Node B, as reported to the CRNC**

There are three states seen over the Iub interface:

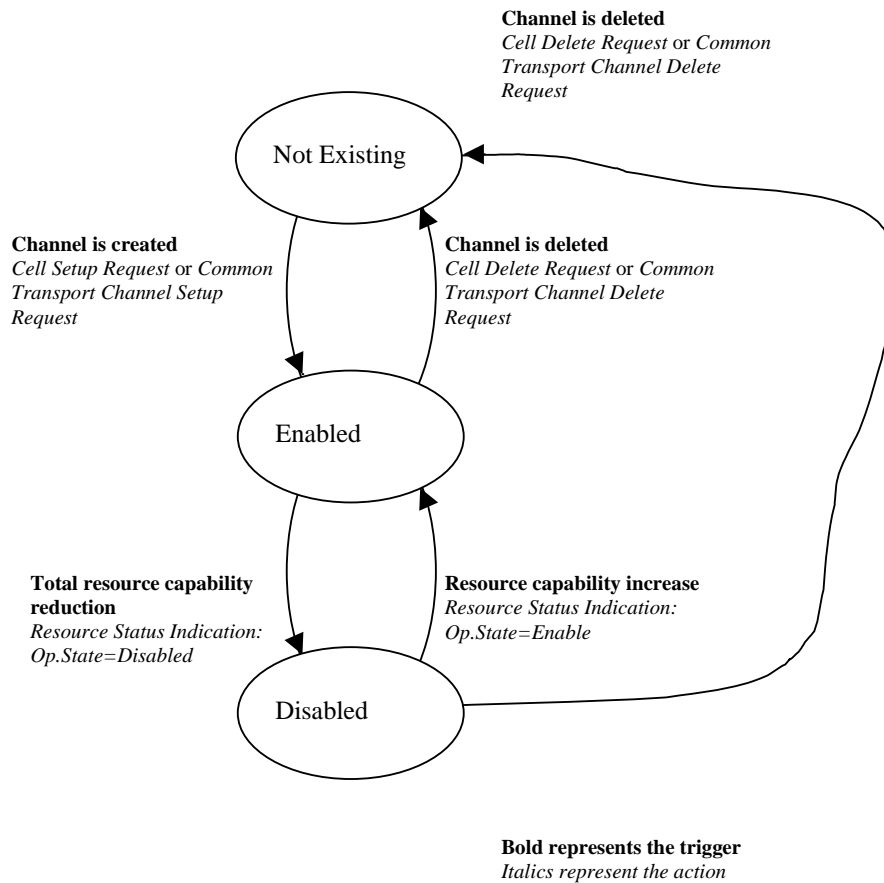
1. Not existing, meaning that the cell does not exist in Node B.
2. Enabled, meaning that the resource can be used by the RNC.
3. Disabled, meaning that the resource cannot be used by the RNC.

When a cell becomes disabled in Node B, that shall be reported to the CRNC together with the cause.

### 6.2.4.3 Common Physical Channels and Common Transport Channels

Common physical channels and common transport channels in Node B have a resource operational state.

Figure 6 illustrates the state diagram for common physical channels and common transport channels in Node B, as seen over the Iub interface.



**Figure 6: States for a common channel in Node B, as reported to the CRNC**

There are three states seen over the Iub interface:

1. Not existing, meaning that the resource does not exist in Node B;
2. Enabled, meaning that the resource can be used by the RNC;
3. Disabled, meaning that the resource cannot be used by the RNC.

When a channel becomes disabled in the Node B, this shall be reported to the CRNC together with the cause.

### 6.2.4.4 Physical Shared Channels

Physical Shared Channels includes the Physical Downlink Shared Channels (PDSCH), High Speed Physical Shared Channels (HS-PDSCH) and [TDD - The Physical Uplink Shared Channels (PUSCH)]. These PDSCH and PUSCH [TDD] are special cases of the Common Physical Channels.

[FDD - A PDSCH is defined by a channelisation code within a code subtree that is configured within a specific Communication Context. The PDSCH is activated dynamically as part of the DSCH scheduling.]

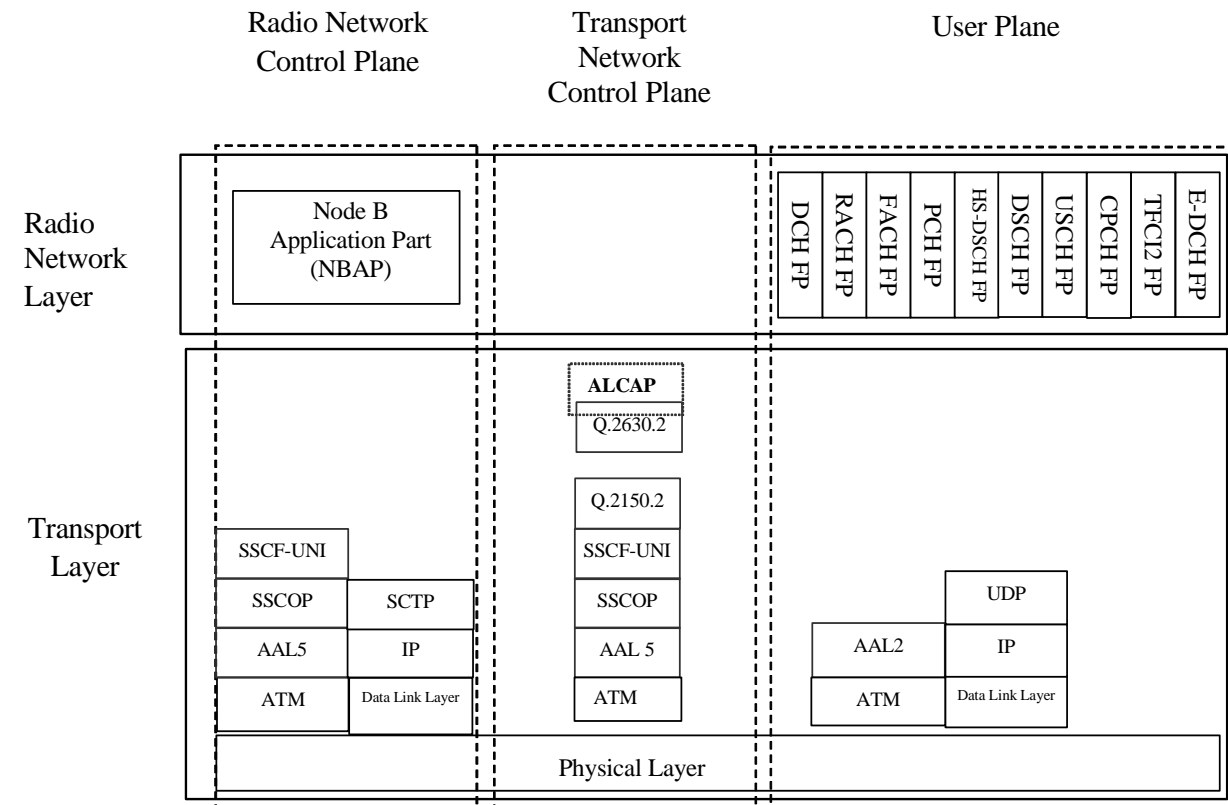
[FDD - A HS-PDSCH is defined by a channelisation code within a code subtree that is configured within a specific Communication Context. The HS-PDSCH is activated dynamically as part of the HS-DSCH scheduling.]

[TDD - A PDSCH is defined by a channelisation code, a time slot and other Physical Channel parameters. Several PDSCH may be grouped into a PDSCH Set, which is given a "PDSCH Set Id". The PDSCH Sets are configured in the Node B in the "Common Transport Channel" data base by Common NBAP messages. These PDSCH Sets are available to carry DSCH data. The PDSCH Sets are dynamically activated to carry DSCH data, as part of the DSCH scheduling.]

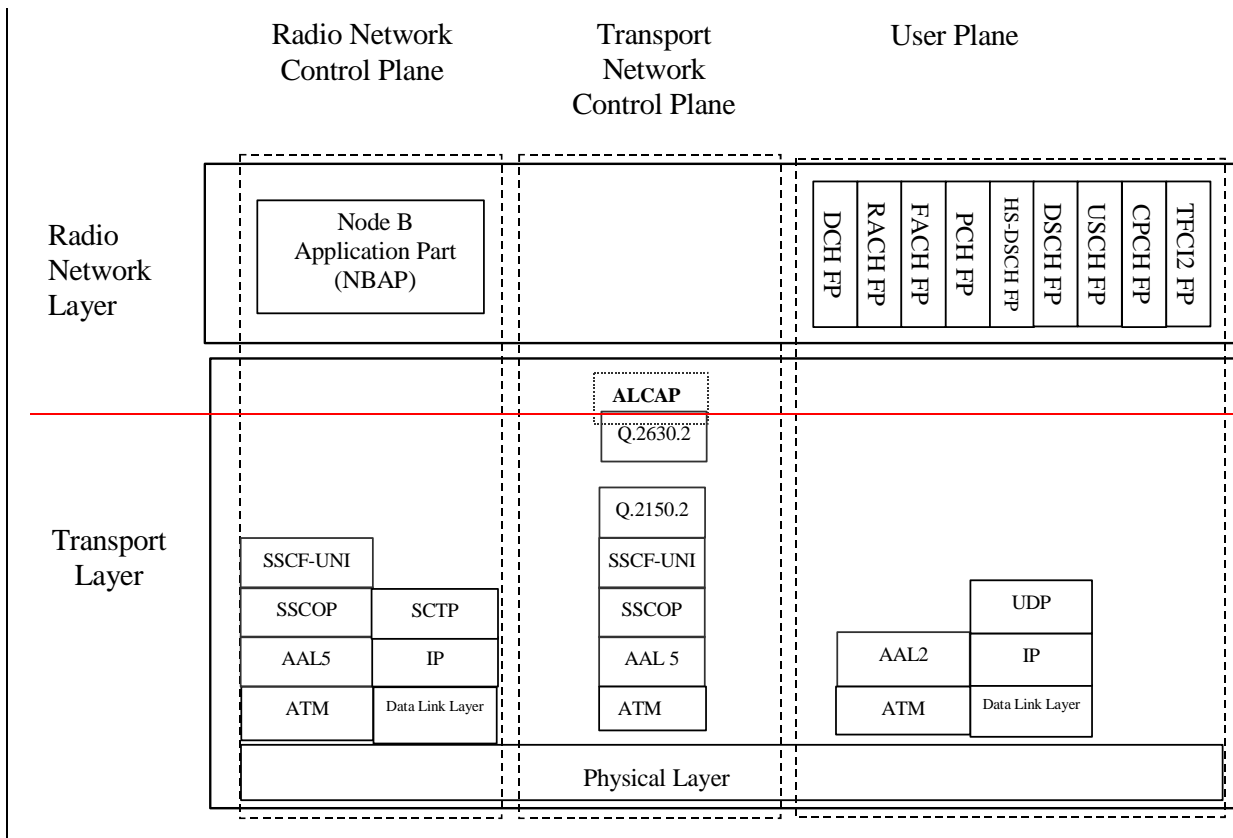
[TDD - A HS-PDSCH is defined by a channelisation code, a time slot and other Physical Channel parameters. The HS-PDSCH is activated dynamically as part of the HS-DSCH scheduling.]

[TDD - A PUSCH is defined by a channelisation code, a time slot and other Physical Channel parameters. Several PUSCH may be grouped into a PUSCH Set, which is given a "PUSCH Set Id". The PUSCH Sets are configured in the Node B in the "Common Transport Channel" data base by Common NBAP messages. These PUSCH Sets are available to carry USCH data. The PUSCH Sets are dynamically activated to carry USCH data, as part of the USCH scheduling.]

## 7 Iub Interface Protocol Structure







**Figure 7: Iub Interface Protocol Structure.**

The Iub interface protocol architecture consists of two functional layers:

1. Radio Network Layer, defines procedures related to the operation of Node B. The radio network layer consists of a radio network control plane and a radio network user plane.
2. Transport Layer, defines procedures for establishing physical connections between Node B and the RNC.

There shall be one dedicated AAL2 or UDP/IP transport bearer for each RACH, one for each FACH transport channel, and one for each CPCH [FDD].

## 8 Other Iub Interface Specifications

### 8.1 UTRAN Iub Interface: Layer 1 (TSG RAN 25.431)

This document [5] specifies the standards allowed for the implement of Layer 1 (physical layer) on the I<sub>ub</sub> interface.

### 8.2 UTRAN Iub Interface: Signalling Transport (TSG RAN 25.432)

This document [6] specifies the signalling transport related to NBAP signalling to be used across the Iub Interface.

### 8.3 NBAP Specification (TSG RAN 25.433)

This document [7] specifies the standards for NBAP specification to be used over Iub Interface.

## 8.4 UTRAN Iub Interface: Data Transport & Transport Signalling for Common Transport Channel Data Streams (TSG RAN 25.434)

This document [8] provides a specification of the UTRAN RNC-Node B (Iub) interface Data Transport and Transport Signalling for Common Transport Channel data streams.

## 8.5 UTRAN Iub Interface: User Plane Protocols for Common Transport Channel Data Streams (TSG RAN 25.435)

This document [9] provides a specification of the UTRAN RNC-Node B (Iub) interface user plane protocols for Common Transport Channel data streams.

## 8.6 UTRAN Iur/Iub Interface: Data Transport & Transport Signalling for DCH Data Streams (TSG RAN 25.426)

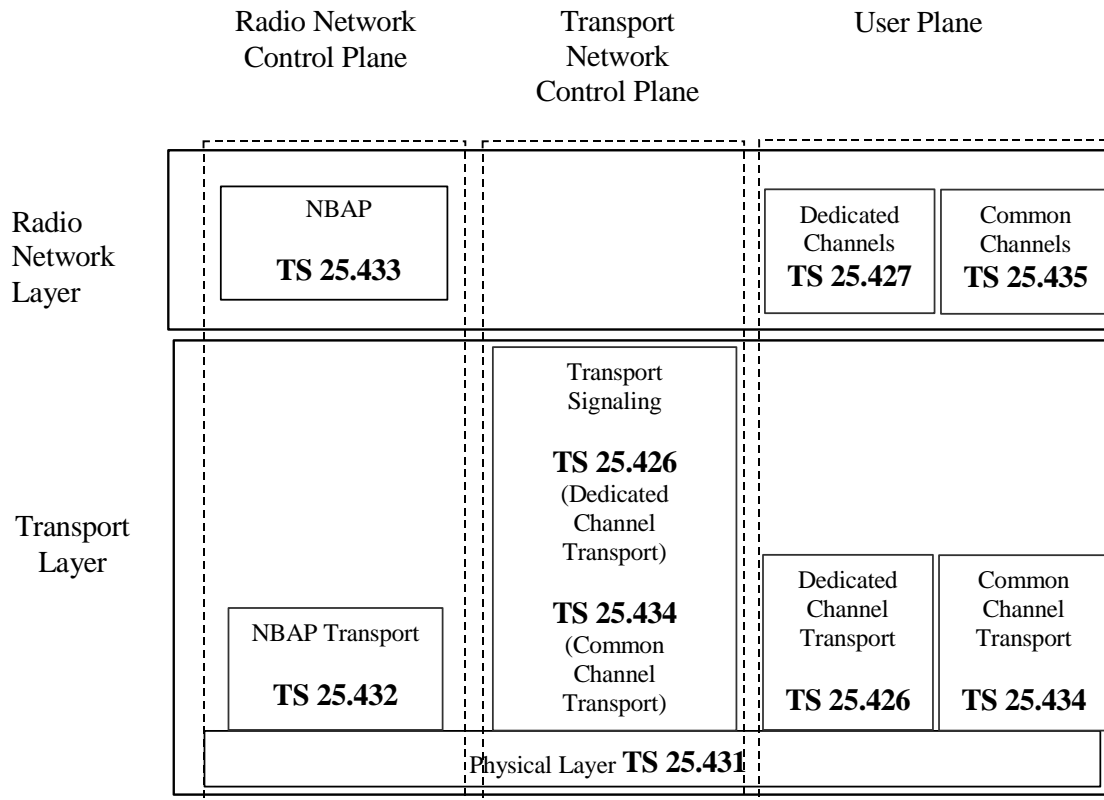
This Technical Specification [10] specifies the transport bearers for the DCH data streams on UTRAN Iur and Iub interfaces. The corresponding Transport Network Control plane is also specified.

## 8.7 UTRAN Iur/Iub Interface: User Plane Protocol for DCH Data Streams (TSG RAN 25.427)

This document [11] provides a specification of the UTRAN Iur and Iub interfaces user plane protocols for Dedicated Transport Channel data streams.

## 8.8 Summary of UTRAN Iub Interface Technical Specifications

The relationship between the technical specifications that define the UTRAN Iub interface is shown in figure 8.



**Figure 8: Iub Interface Technical Specifications.**

## CHANGE REQUEST

# 25.433 CR CR1059 # rev 1 # Current version: 6.3.0 #

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the # symbols.

**Proposed change affects:** UICC apps  ME  Radio Access Network  Core Network

<b>Title:</b>	# Changes for Introducing EDCH		
<b>Source:</b>	# RAN3		
<b>Work item code:</b>	# EDCH-lurlub	<b>Date:</b>	# 24/11/2004
<b>Category:</b>	# <b>B</b>	<b>Release:</b>	# Rel-6
	Use <u>one</u> of the following categories: <b>F</b> (correction) <b>A</b> (corresponds to a correction in an earlier release) <b>B</b> (addition of feature), <b>C</b> (functional modification of feature) <b>D</b> (editorial modification) Detailed explanations of the above categories can be found in 3GPP <a href="#">TR 21.900</a> .		Use <u>one</u> of the following releases: Ph2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) Rel-4 (Release 4) Rel-5 (Release 5) Rel-6 (Release 6) Rel-7 (Release 7)

<b>Reason for change:</b>	# This CR introduces mechanisms to support enhanced uplink dedicated channels for FDD		
<b>Summary of change:</b>	# Impacted procedures: <ul style="list-style-type: none"> <li>• Audit</li> <li>• Resource Status Indication</li> <li>• Physical Shared Channel Reconfiguration</li> <li>• Radio Link Setup</li> <li>• Radio Link Addition</li> <li>• Synchronised Radio Link Reconfiguration</li> <li>• Unsynchronised Radio Link Reconfiguration</li> </ul>		
<b>Consequences if not approved:</b>	#		

<b>Clauses affected:</b>	# 2; 3.3; 8.2.7; 8.2.15; 8.2.17; 8.2.18; 8.3.1; 8.3.2; 8.3.5; 9.1.17; 9.1.32; 9.1.36; 9.1.37; 9.1.38; 9.1.39; 9.1.40; 9.1.41; 9.1.42; 9.1.43; 9.1.47; 9.1.48; 9.1.62; 9.2.1.53H New sections: 9.2.1.29aa; 9.2.1.29ab; 9.2.1.29ac; 9.2.1.29ad; 9.2.1.29ae (FFS); 9.2.1.29af; 9.2.1.29ag (FFS); 9.2.1.29ah; 9.2.1.38aa; 9.2.1.39a; 9.2.1.53Ha; 9.2.2.13Da; 9.2.2.13Db; 9.2.2.13Dc; 9.2.2.13De; 9.2.2.13Df; 9.2.2.13Ia; 9.2.2.13Ib						
<b>Other specs</b>	<table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td style="text-align: center;">Y</td> <td style="text-align: center;">N</td> </tr> <tr> <td style="text-align: center;">X</td> <td style="text-align: center;"></td> </tr> </table> Other core specifications	Y	N	X		#	25.430 v 6.0.0 CR 56 25.423 v 6.3.0 CR 1007
Y	N						
X							

<b>affected:</b>	<input type="checkbox"/>		
	<input checked="" type="checkbox"/>	X	Test specifications
	<input type="checkbox"/>		
	<input checked="" type="checkbox"/>	X	O&M Specifications

25.401 v 6.4.0 CR 94  
 25.420 v 6.1.0 CR 45  
 25.427 v 6.0.0 CR 95

**Other comments:** ⌘

**How to create CRs using this form:**

Comprehensive information and tips about how to create CRs can be found at <http://www.3gpp.org/specs/CR.htm>. Below is a brief summary:

- 1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <ftp://ftp.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request

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# 1 Scope

The present document specifies the radio network layer signalling protocol called Node B Application Part (NBAP) specification to be used for Control Plane over Iub Interface.

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# 2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

- [1] 3GPP TS 25.401: "UTRAN Overall Description".
- [2] 3GPP TS 25.426: "UTRAN Iur and Iub Interface Data Transport & Transport Signalling for DCH Data Streams".
- [3] CCITT Recommendation X.731 (01/92): "Information Technology – Open Systems Interconnection – Systems Management: State Management function".
- [4] 3GPP TS 25.215: "Physical layer – Measurements (FDD)".
- [5] 3GPP TS 25.225: "Physical layer – Measurements (TDD)".
- [6] 3GPP TS 25.430: "UTRAN Iub General Aspect and Principle".
- [7] 3GPP TS 25.211: "Physical channels and mapping of transport channels onto physical channels (FDD)".
- [8] 3GPP TS 25.212: "Multiplexing and channel coding (FDD)".
- [9] 3GPP TS 25.213: "Spreading and modulation (FDD)".
- [10] 3GPP TS 25.214: "Physical layer procedures (FDD)".
- [11] ITU-T Recommendation X.691, (12/97) "Information technology - ASN.1 encoding rules - Specification of Packed Encoding Rules (PER)".
- [12] ITU-T Recommendation X.680, (12/97) "Information Technology - Abstract Syntax Notation One (ASN.1): Specification of basic notation".
- [13] ITU-T Recommendation X.681, (12/97) "Information Technology - Abstract Syntax Notation One (ASN.1): Information object specification".
- [14] 3GPP TS 25.104: "UTRA (BS) FDD; Radio Transmission and Reception".
- [15] 3GPP TS 25.105: "UTRA (BS) TDD; Radio Transmission and Reception".
- [16] 3GPP TS 25.427: "UTRAN Iur/Iub Interface User Plane Protocol for DCH Data Stream".
- [17] 3GPP TS 25.402: "Synchronisation in UTRAN Stage2".
- [18] 3GPP TS 25.331: "RRC Protocol Specification".

- [19] 3GPP TS25.221: "Physical channels and mapping of transport channels onto physical channels[TDD]".
- [20] 3GPP TS 25.223: "Spreading and modulation (TDD)".
- [21] 3GPP TS 25.224: "Physical Layer Procedures (TDD)".
- [22] 3GPP TS 25.133: "Requirements for support of Radio Resource management (FDD)".
- [23] 3GPP TS 25.123: "Requirements for support of Radio Resource management (TDD)".
- [24] 3GPP TS 25.435: "UTRAN Iub Interface: User Plane Protocols for Common Transport Channel Data Streams".
- [25] 3GPP TS 25.302: "Services Provided by the Physical Layer".
- [26] 3GPP TR 25.921: "Guidelines and Principles for Protocol Description and Error Handling".
- [27] ICD-GPS-200: "Navstar GPS Space Segment/Navigation User Interface".
- [28] RTCM-SC104: "RTCM Recommended Standards for Differential GNSS Service (v.2.2)".
- [29] IETF RFC 2460 "Internet Protocol, Version 6 (IPv6) Specification".
- [30] IETF RFC 768 "User Datagram Protocol", (8/1980)
- [31] 3GPP TS 25.434: "UTRAN Iub Interface Data Transport & Transport Signalling for Common Transport Channel Data Streams".
- [32] 3GPP TS 25.321: "MAC protocol specification".
- [33] 3GPP TS 25.306: "UE Radio Access capabilities".
- [34] 3GPP TS 25.222: "Multiplexing and Channel Coding (TDD)".
- [35] IETF RFC 2474 "Definition of the Differentiated Services Field (DS Field) in the IPv4 and IPv6 Headers".
- [36] IETF RFC 2475 "An Architecture for Differentiated Services".
- [37] [3GPP TS 25.309: "FDD Enhanced Uplink; Overall description; Stage 2"](#).

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## 3 Definitions, Symbols and Abbreviations

### 3.1 Definitions

For the purposes of the present document, the following terms and definitions apply.

**CRNC Communication Context:** The CRNC Communication Context contains the necessary information for the CRNC for communication with a specific UE. The CRNC Communication Context is identified by the CRNC Communication Context ID.

**Elementary Procedure:** The NBAP protocol consists of Elementary Procedures (EPs). An Elementary Procedure is a unit of interaction between the CRNC and the Node B.

An EP consists of an initiating message and possibly a response message.

Two kinds of EPs are used:

- **Class 1:** Elementary Procedures with response (success or failure).
- **Class 2:** Elementary Procedures without response.

For **Class 1** EPs, the types of responses can be as follows:

Successful

- A signalling message explicitly indicates that the elementary procedure has been successfully completed with the receipt of the response.

Unsuccessful

- A signalling message explicitly indicates that the EP failed.

**Class 2** EPs are considered always successful.

**Node B Communication Context:** The Node B Communication Context contains the necessary information for the Node B for communication with a specific UE. The Node B Communication Context is created by the Radio Link Setup procedure and deleted by the Radio Link Deletion procedure when deleting the last Radio Link within the Node B Communication Context. The Node B Communication Context is identified by the Node B Communication Context ID.

**Prepared Reconfiguration:** A Prepared Reconfiguration exists when the Synchronised Radio Link Reconfiguration Preparation procedure has been completed successfully. The Prepared Reconfiguration does not exist any more after either of the procedures Synchronised Radio Link Reconfiguration Commit or Synchronised Radio Link Reconfiguration Cancellation has been completed.

## 3.2 Symbols

Void.

## 3.3 Abbreviations

For the purposes of the present document, the following abbreviations apply:

A-GPS	Assisted GPS
AICH	Acquisition Indicator Channel
ALCAP	Access Link Control Application Part
AP-AICH	Access Preamble Acquisition Indicator Channel
ASN.1	Abstract Syntax Notation One
BCCH	Broadcast Control Channel
CCPCH	Common Control Physical Channel
CFN	Connection Frame Number
CM	Compressed Mode
CPCH	Common Packet Channel
CPICH	Common Pilot Channel
CRNC	Controlling Radio Network Controller
CSICH	CPCH Status Indicator Channel
DCH	Dedicated Channel
DGPS	Differential GPS
DL	Downlink
DPCCH	Dedicated Physical Control Channel
DPCH	Dedicated Physical Channel
DPDCH	Dedicated Physical Data Channel
DSCH	Downlink Shared Channel
<a href="#">E-DCH</a>	<a href="#">Enhanced UL DCH</a>
FACH	Forward Access Channel
FDD	Frequency Division Duplex
FP	Frame Protocol
GPS	Global Positioning System
HSDPA	High Speed Downlink Packet Access
HS-DSCH	High Speed Downlink Shared Channel
HS-PDSCH	High Speed Physical Downlink Shared Channel
HS-SCCH	High Speed Shared Control Channel



HS-SICH	High Speed Shared Information Channel
IP	Internet Protocol
IPDL	Idle Periods in the DownLink
ISCP	Interference Signal Code Power
L1	Layer 1
L2	Layer 2
MIB	Master Information Block
NBAP	Node B Application Part
O&M	Operation and Maintenance
PCCPCH	Primary Common Control Physical Channel
PCH	Paging Channel
PCPCH	Physical Common Packet Channel
PDSCH	Physical Downlink Shared Channel
PICH	Paging Indication Channel
PUSCH	Physical Uplink Shared Channel
RACH	Random Access Channel
RL	Radio Link
RLS	Radio Link Set
RNC	Radio Network Controller
RRC	Radio Resource Control
SB	Scheduling Block
SCCPCH	Secondary Common Control Physical Channel
SCH	Synchronisation Channel
SCTD	Space Code Transmit Diversity
SIB	System Information Block
SRNC	Serving Radio Network Controller
SSDT	Site Selection Diversity Transmission
STTD	Space Time Transmit Diversity
TDD	Time Division Duplex
TFC	Transport Format Combination
TFCI	Transport Format Combination Indicator
TFCS	Transport Format Combination Set
TFS	Transport Format Set
TPC	Transmit Power Control
TSTD	Time Switched Transmit Diversity
UARFCN	UTRA Absolute Radio Frequency Channel Number
UDP	User Datagram Protocol
UE	User Equipment
UL	Uplink
UMTS	Universal Mobile Telecommunications System
USCH	Uplink Shared Channel
UTRA	Universal Terrestrial Radio Access
UTRAN	Universal Terrestrial Radio Access Network

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## 4 General

### 4.1 Procedure Specification Principles

The principle for specifying the procedure logic is to specify the functional behaviour of the Node B exactly and completely. The CRNC functional behaviour is left unspecified. The Reset procedure is an exception from this principle.

The following specification principles have been applied for the procedure text in subclause 8:

- The procedure text discriminates between:
  - 1) Functionality which "shall" be executed

The procedure text indicates that the receiving node "shall" perform a certain function Y under a certain condition. If the receiving node supports procedure X but cannot perform functionality Y requested in the REQUEST message of a Class 1 EP, the receiving node shall respond with the message used to report unsuccessful outcome for this procedure, containing an appropriate cause value.

2) Functionality which "shall, if supported" be executed

The procedure text indicates that the receiving node "shall, if supported," perform a certain function Y under a certain condition. If the receiving node supports procedure X, but does not support functionality Y, the receiving node shall proceed with the execution of the EP, possibly informing the requesting node about the not supported functionality.

- Any required inclusion of an optional IE in a response message is explicitly indicated in the procedure text. If the procedure text does not explicitly indicate that an optional IE shall be included in a response message, the optional IE shall not be included. For requirements on including *Criticality Diagnostics* IE, see section 10. For examples on how to use the *Criticality Diagnostics* IE, see Annex C.

## 4.2 Forwards and Backwards Compatibility

The forwards and backwards compatibility of the protocol is assured by a mechanism in which all current and future messages, and IEs or groups of related IEs, include Id and criticality fields that are coded in a standard format that will not be changed in the future. These parts can always be decoded regardless of the standard version.

## 4.3 Specification Notations

For the purposes of the present document, the following notations apply:

- [FDD] This tagging of a word indicates that the word preceding the tag "[FDD]" applies only to FDD. This tagging of a heading indicates that the heading preceding the tag "[FDD]" and the section following the heading applies only to FDD.
- [TDD] This tagging of a word indicates that the word preceding the tag "[TDD]" applies only to TDD, including 3.84Mcps TDD and 1.28Mcps TDD. This tagging of a heading indicates that the heading preceding the tag "[TDD]" and the section following the heading applies only to TDD, including 3.84Mcps TDD and 1.28Mcps TDD.
- [3.84Mcps TDD] This tagging of a word indicates that the word preceding the tag "[3.84Mcps TDD]" applies only to 3.84Mcps TDD. This tagging of a heading indicates that the heading preceding the tag "[3.84Mcps TDD]" and the section following the heading applies only to 3.84Mcps TDD.
- [1.28Mcps TDD] This tagging of a word indicates that the word preceding the tag "[1.28Mcps TDD]" applies only to 1.28Mcps TDD. This tagging of a heading indicates that the heading preceding the tag "[1.28Mcps TDD]" and the section following the heading applies only to 1.28Mcps TDD.
- [FDD - ...] This tagging indicates that the enclosed text following the "[FDD - " applies only to FDD. Multiple sequential paragraphs applying only to FDD are enclosed separately to enable insertion of TDD specific (or common) paragraphs between the FDD specific paragraphs.
- [TDD - ...] This tagging indicates that the enclosed text following the "[TDD - " applies only to TDD, including 3.84Mcps TDD and 1.28Mcps TDD. Multiple sequential paragraphs applying only to TDD are enclosed separately to enable insertion of FDD specific (or common) paragraphs between the TDD specific paragraphs.
- [3.84Mcps TDD - ...] This tagging indicates that the enclosed text following the "[3.84Mcps TDD - " applies only to 3.84Mcps TDD. Multiple sequential paragraphs applying only to 3.84Mcps TDD are enclosed separately to enable insertion of FDD and TDD specific (or common) paragraphs between the 3.84Mcps TDD specific paragraphs.

[1.28Mcps TDD - ...] This tagging indicates that the enclosed text following the "[1.28Mcps TDD - " applies only to 1.28Mcps TDD. Multiple sequential paragraphs applying only to 1.28Mcps TDD are enclosed separately to enable insertion of FDD and TDD specific (or common) paragraphs between the 1.28Mcps TDD specific paragraphs.

Procedure	When referring to an elementary procedure in the specification the Procedure Name is written with the first letters in each word in upper case characters followed by the word "procedure", e.g. Radio Link Setup procedure.
Message	When referring to a message in the specification the MESSAGE NAME is written with all letters in upper case characters followed by the word "message", e.g. RADIO LINK SETUP REQUEST message.
IE	When referring to an information element (IE) in the specification the <i>Information Element Name</i> is written with the first letters in each word in upper case characters and all letters in Italic font followed by the abbreviation "IE", e.g. <i>Transport Format Set IE</i> .
Value of an IE	When referring to the value of an information element (IE) in the specification the "Value" is written as it is specified in subclause 9.2 enclosed by quotation marks, e.g. "Abstract Syntax Error (Reject)" or "SSDT Active in the UE".

## 5 NBAP Services

### 5.1 Parallel Transactions

Unless explicitly indicated in the procedure description, at any instance in time one protocol peer shall have a maximum of one ongoing dedicated NBAP procedure related to a certain Node B Communication Context.

## 6 Services Expected from Signalling Transport

NBAP requires an assured in-sequence delivery service from the signalling bearer, and notification if the assured in-sequence delivery service is no longer available.

## 7 Functions of NBAP

The NBAP protocol provides the following functions:

- Cell Configuration Management. This function gives the CRNC the possibility to manage the cell configuration information in a Node B.
- Common Transport Channel Management. This function gives the CRNC the possibility to manage the configuration of Common Transport Channels in a Node B.
- System Information Management. This function gives the CRNC the ability to manage the scheduling of System Information to be broadcast in a cell.
- Resource Event Management. This function gives the Node B the ability to inform the CRNC about the status of Node B resources.
- Configuration Alignment. This function gives the CRNC and the Node B the possibility to verify and enforce that both nodes have the same information on the configuration of the radio resources.
- Measurements on Common Resources. This function allows the CRNC to initiate measurements on common resources in the Node B. The function also allows the Node B to report the result of the measurements.
- Radio Link Management. This function allows the CRNC to manage radio links using dedicated resources in a Node B.

- Radio Link Supervision. This function allows the CRNC to report failures and restorations of a Radio Link.
- Compressed Mode Control [FDD]. This function allows the CRNC to control the usage of compressed mode in a Node B.
- Measurements on Dedicated Resources. This function allows the CRNC to initiate measurements on dedicated resources in the Node B. The function also allows the Node B to report the result of the measurements.
- DL Power Drifting Correction [FDD]. This function allows the CRNC to adjust the DL power level of one or more Radio Links in order to avoid DL power drifting between the Radio Links.
- Reporting of General Error Situations. This function allows reporting of general error situations, for which function specific error messages have not been defined.
- Physical Shared Channel Management. This function allows the CRNC to manage physical resources in the Node B belonging to High Speed Downlink Shared Channels and High Speed Shared Control Channels [TDD - and High Speed Shared Indication Channels and Shared Channels (USCH/DSCH)].
- DL Power Timeslot Correction [TDD]. This function enables the Node B to apply an individual offset to the transmission power in each timeslot according to the downlink interference level at the UE.
- Cell Synchronisation [TDD]. This function allows the synchronisation of cells or Node Bs via the air interface.
- Information Exchange. This function allows the CRNC to initiate information provision from the Node B. The function also allows the Node B to report the requested information.
- Bearer Rearrangement. This function allows the Node B to indicate the need for bearer re-arrangement for a Node B Communication Context. The function also allows the CRNC to re-arrange bearers for a Node B Communication Context.

The mapping between the above functions and NBAP elementary procedures is shown in the table below.

**Table 1: Mapping between functions and NBAP elementary procedures**

Function	Elementary Procedure(s)
Cell Configuration Management	a) Cell Setup b) Cell Reconfiguration c) Cell Deletion
Common Transport Channel Management	a) Common Transport Channel Setup b) Common Transport Channel Reconfiguration c) Common Transport Channel Deletion
System Information Management	System Information Update
Resource Event Management	a) Block Resource b) Unblock Resource c) Resource Status Indication
Configuration Alignment	a) Audit Required b) Audit c) Reset
Measurements on Common Resources	a) Common Measurement Initiation b) Common Measurement Reporting c) Common Measurement Termination d) Common Measurement Failure
Radio Link Management.	a) Radio Link Setup b) Radio Link Addition c) Radio Link Deletion d) Unsynchronised Radio Link Reconfiguration e) Synchronised Radio Link Reconfiguration Preparation f) Synchronised Radio Link Reconfiguration Commit g) Synchronised Radio Link Reconfiguration Cancellation h) Radio Link Pre-emption i) Radio Link Activation j) Radio Link Parameter Update
Radio Link Supervision.	a) Radio Link Failure b) Radio Link Restoration
Compressed Mode Control [FDD]	a) Radio Link Setup b) Radio Link Addition c) Compressed Mode Command d) Unsynchronised Radio Link Reconfiguration e) Synchronised Radio Link Reconfiguration Preparation f) Synchronised Radio Link Reconfiguration Commit g) Synchronised Radio Link Reconfiguration Cancellation
Measurements on Dedicated Resources	a) Dedicated Measurement Initiation b) Dedicated Measurement Reporting c) Dedicated Measurement Termination d) Dedicated Measurement Failure
DL Power Drifting Correction [FDD]	Downlink Power Control
Reporting of General Error Situations	Error Indication
Physical Shared Channel Management	Physical Shared Channel Reconfiguration
DL Power Timeslot Correction [TDD]	Downlink Power Timeslot Control
Cell Synchronisation [TDD]	a) Cell Synchronisation Initiation b) Cell Synchronisation Reconfiguration c) Cell Synchronisation Reporting d) Cell Synchronisation Termination e) Cell Synchronisation Failure f) Cell Synchronisation Adjustment
Information Exchange	a) Information Exchange Initiation b) Information Reporting c) Information Exchange Termination d) Information Exchange Failure

Function	Elementary Procedure(s)
Bearer Re-arrangement	a) Bearer Re-arrangement Indication b) Unsynchronised Radio Link Reconfiguration c) Synchronised Radio Link Reconfiguration Preparation d) Synchronised Radio Link Reconfiguration Commit e) Synchronised Radio Link Reconfiguration Cancellation

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## 8 NBAP Procedures

### 8.1 Elementary Procedures

NBAP procedures are divided into common procedures and dedicated procedures.

- NBAP common procedures are procedures that request initiation of a Node B Communication Context for a specific UE in Node B or are not related to a specific UE. NBAP common procedures also incorporate logical O&M [1] procedures.
- NBAP dedicated procedures are procedures that are related to a specific Node B Communication Context in Node B. This Node B Communication Context is identified by a Node B Communication Context identity.

The two types of procedures may be carried on separate signalling links.

In the following tables, all EPs are divided into Class 1 and Class 2 EPs:

Table 2: Class 1

Elementary Procedure	Message	Successful Outcome	Unsuccessful Outcome
		Response message	Response message
Cell Setup	CELL SETUP REQUEST	CELL SETUP RESPONSE	CELL SETUP FAILURE
Cell Reconfiguration	CELL RECONFIGURATION REQUEST	CELL RECONFIGURATION RESPONSE	CELL RECONFIGURATION FAILURE
Cell Deletion	CELL DELETION REQUEST	CELL DELETION RESPONSE	
Common Transport Channel Setup	COMMON TRANSPORT CHANNEL SETUP REQUEST	COMMON TRANSPORT CHANNEL SETUP RESPONSE	COMMON TRANSPORT CHANNEL SETUP FAILURE
Common Transport Channel Reconfiguration	COMMON TRANSPORT CHANNEL RECONFIGURATION REQUEST	COMMON TRANSPORT CHANNEL RECONFIGURATION RESPONSE	COMMON TRANSPORT CHANNEL RECONFIGURATION FAILURE
Common Transport Channel Deletion	COMMON TRANSPORT CHANNEL DELETION REQUEST	COMMON TRANSPORT CHANNEL DELETION RESPONSE	
Physical Shared Channel Reconfiguration	PHYSICAL SHARED CHANNEL RECONFIGURATION REQUEST	PHYSICAL SHARED CHANNEL RECONFIGURATION RESPONSE	PHYSICAL SHARED CHANNEL RECONFIGURATION FAILURE
Audit	AUDIT REQUEST	AUDIT RESPONSE	AUDIT FAILURE
Block Resource	BLOCK RESOURCE REQUEST	BLOCK RESOURCE RESPONSE	BLOCK RESOURCE FAILURE
Radio Link Setup	RADIO LINK SETUP REQUEST	RADIO LINK SETUP RESPONSE	RADIO LINK SETUP FAILURE
System Information Update	SYSTEM INFORMATION UPDATE REQUEST	SYSTEM INFORMATION UPDATE RESPONSE	SYSTEM INFORMATION UPDATE FAILURE
Common Measurement Initiation	COMMON MEASUREMENT INITIATION REQUEST	COMMON MEASUREMENT INITIATION RESPONSE	COMMON MEASUREMENT INITIATION FAILURE
Radio Link Addition	RADIO LINK ADDITION REQUEST	RADIO LINK ADDITION RESPONSE	RADIO LINK ADDITION FAILURE
Radio Link Deletion	RADIO LINK DELETION REQUEST	RADIO LINK DELETION RESPONSE	
Synchronised Radio Link Reconfiguration Preparation	RADIO LINK RECONFIGURATION PREPARE	RADIO LINK RECONFIGURATION READY	RADIO LINK RECONFIGURATION FAILURE
Unsynchronised Radio Link Reconfiguration	RADIO LINK RECONFIGURATION REQUEST	RADIO LINK RECONFIGURATION RESPONSE	RADIO LINK RECONFIGURATION FAILURE
Dedicated Measurement Initiation	DEDICATED MEASUREMENT INITIATION REQUEST	DEDICATED MEASUREMENT INITIATION RESPONSE	DEDICATED MEASUREMENT INITIATION FAILURE
Reset	RESET REQUEST	RESET RESPONSE	
Cell Synchronisation Initiation [TDD]	CELL SYNCHRONISATION INITIATION REQUEST	CELL SYNCHRONISATION INITIATION RESPONSE	CELL SYNCHRONISATION INITIATION FAILURE
Cell Synchronisation Reconfiguration [TDD]	CELL SYNCHRONISATION RECONFIGURATION REQUEST	CELL SYNCHRONISATION RECONFIGURATION RESPONSE	CELL SYNCHRONISATION RECONFIGURATION FAILURE
Cell Synchronisation Adjustment [TDD]	CELL SYNCHRONISATION ADJUSTMENT REQUEST	CELL SYNCHRONISATION ADJUSTMENT RESPONSE	CELL SYNCHRONISATION ADJUSTMENT FAILURE
Information Exchange Initiation	INFORMATION EXCHANGE INITIATION REQUEST	INFORMATION EXCHANGE INITIATION RESPONSE	INFORMATION EXCHANGE INITIATION FAILURE

Table 3: Class 2

Elementary Procedure	Message
Resource Status Indication	RESOURCE STATUS INDICATION
Audit Required	AUDIT REQUIRED INDICATION
Common Measurement Reporting	COMMON MEASUREMENT REPORT
Common Measurement Termination	COMMON MEASUREMENT TERMINATION REQUEST
Common Measurement Failure	COMMON MEASUREMENT FAILURE INDICATION
Synchronised Radio Link Reconfiguration Commit	RADIO LINK RECONFIGURATION COMMIT
Synchronised Radio Link Reconfiguration Cancellation	RADIO LINK RECONFIGURATION CANCEL
Radio Link Failure	RADIO LINK FAILURE INDICATION
Radio Link Restoration	RADIO LINK RESTORE INDICATION
Dedicated Measurement Reporting	DEDICATED MEASUREMENT REPORT
Dedicated Measurement Termination	DEDICATED MEASUREMENT TERMINATION REQUEST
Dedicated Measurement Failure	DEDICATED MEASUREMENT FAILURE INDICATION
Downlink Power Control [FDD]	DL POWER CONTROL REQUEST
Compressed Mode Command [FDD]	COMPRESSED MODE COMMAND
Unblock Resource	UNBLOCK RESOURCE INDICATION
Error Indication	ERROR INDICATION
Downlink Power Timeslot Control [TDD]	DL POWER TIMESLOT CONTROL REQUEST
Radio Link Pre-emption	RADIO LINK PREEMPTION REQUIRED INDICATION
Cell Synchronisation Reporting [TDD]	CELL SYNCHRONISATION REPORT
Cell Synchronisation Termination [TDD]	CELL SYNCHRONISATION TERMINATION REQUEST
Cell Synchronisation Failure [TDD]	CELL SYNCHRONISATION FAILURE INDICATION
Information Reporting	INFORMATION REPORT
Information Exchange Termination	INFORMATION EXCHANGE TERMINATION REQUEST
Information Exchange Failure	INFORMATION EXCHANGE FAILURE INDICATION
Bearer Re-arrangement	BEARER REARRANGEMENT INDICATION
Radio Link Activation	RADIO LINK ACTIVATION COMMAND
Radio Link Parameter Update	RADIO LINK PARAMETER UPDATE INDICATION

## 8.2 NBAP Common Procedures

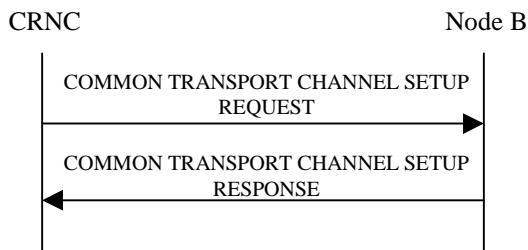
### 8.2.1 Common Transport Channel Setup

#### 8.2.1.1 General

This procedure is used for establishing the necessary resources in Node B, regarding Secondary CCPCH, PICH, PRACH, PCPCH [FDD], AICH [FDD], AP\_AICH [FDD], CD/CA-ICH [FDD], FACH, PCH, RACH, FPACH [1.28Mcps TDD] and CPCH [FDD].



## 8.2.1.2 Successful Operation



**Figure 1: Common Transport Channel Setup procedure, Successful Operation**

The procedure is initiated with a COMMON TRANSPORT CHANNEL SETUP REQUEST message sent from the CRNC to the Node B using the Node B Control Port.

One message can configure only one of the following combinations:

- [FDD - one Secondary CCPCH, and FACHs, PCH and PICH related to that Secondary CCPCH], or
- [TDD - one CCTrCH consisting of Secondary CCPCHs and FACHs, PCH with the corresponding PICH related to that group of Secondary CCPCHs], or
- one [1.28Mcps TDD - or more] PRACH, one RACH and one AICH [FDD] and one FPACH[1.28Mcps TDD] related to that PRACH.
- [FDD - PCPCHs, one CPCH, one AP\_AICH and one CD/CA-ICH related to that group of PCPCHs.]

**Secondary CCPCH:**

[FDD - When the COMMON TRANSPORT CHANNEL SETUP REQUEST message contains the *Secondary CCPCH* IE, the Node B shall configure and activate the indicated Secondary CCPCH according to the COMMON TRANSPORT CHANNEL SETUP REQUEST message.]

[TDD - When the COMMON TRANSPORT CHANNEL SETUP REQUEST message contains the *Secondary CCPCH* IE, the Node B shall configure and activate the indicated Secondary CCPCH(s) according to the COMMON TRANSPORT CHANNEL SETUP REQUEST message.]

[TDD - FACHs and PCH may be mapped onto a CCTrCH which may consist of several Secondary CCPCHs]

If the COMMON TRANSPORT CHANNEL SETUP REQUEST message contains the *FACH Parameters* IE, the Node B shall configure and activate the indicated FACH(s) according to the COMMON TRANSPORT CHANNEL SETUP REQUEST message.

If the COMMON TRANSPORT CHANNEL SETUP REQUEST message contains the *PCH Parameters* IE, the Node B shall configure and activate the concerned PCH and the associated PICH according to the COMMON TRANSPORT CHANNEL SETUP REQUEST message.

[1.28Mcps TDD - If the *PCH Power* IE is included in the *PCH Parameters* IE of the COMMON TRANSPORT CHANNEL SETUP REQUEST, the Node B shall use this value as the power at which the PCH shall be transmitted.]

[TDD - If the *TSTD Indicator* IE for the S-CCPCH is included and is set to "active" in the COMMON TRANSPORT CHANNEL SETUP REQUEST, the Node B shall activate TSTD diversity for all S-CCPCHs defined in the message that are not beacon channels [19,21]. If the *TSTD Indicator* IE is not included or is set to "not active" in the COMMON TRANSPORT CHANNEL SETUP REQUEST, the Node B shall not activate TSTD diversity for the S-CCPCHs defined in the message.]

[1.28Mcps TDD - If the *TSTD Indicator* IE for the PICH is included and is set to "active" in the COMMON TRANSPORT CHANNEL SETUP REQUEST message, the Node B shall activate TSTD diversity for the PICH if it is not a beacon channel [19,21]. If the *TSTD Indicator* IE is set to "not active" or the *TSTD Indicator* IE is not included for the PICH in the COMMON TRANSPORT CHANNEL SETUP REQUEST message, the Node B shall not activate TSTD diversity for the PICH.]

**PRACH:**

When the COMMON TRANSPORT CHANNEL SETUP REQUEST message contains the *PRACH* IE, the Node B shall configure and activate the indicated PRACH and the associated RACH [FDD - and the associated AICH] according to the COMMON TRANSPORT CHANNEL SETUP REQUEST message.

**[1.28Mcps TDD - FPACH]:**

If the COMMON TRANSPORT CHANNEL SETUP REQUEST message contains the *FPACH* IE, the Node B shall configure and activate the indicated FPACH according to the COMMON TRANSPORT CHANNEL SETUP REQUEST message.

Where more than one FPACH is defined, the FPACH that Node B should use is defined by the UpPCH signature (SYNC\_UL) code that the UE used. The FPACH number =  $N \bmod M$  where N denotes the signature number (0..7) and M denotes the number of FPACHs that are defined in a cell. The FPACH number is in ascending order by *Common Physical Channel ID* IE contained in the COMMON TRANSPORT CHANNEL SETUP REQUEST message.

**[FDD - PCPCHs]:**

When the COMMON TRANSPORT CHANNEL SETUP REQUEST message contains the *CPCH Parameters* IE, the Node B shall configure and activate the indicated CPCH and the associated PCPCH(s), AP-AICH and CD/CA-ICH according to the COMMON TRANSPORT CHANNEL SETUP REQUEST message.

If the COMMON TRANSPORT CHANNEL SETUP REQUEST message includes *CD Signatures* IE, the Node B may use only the given CD signatures on CD/CA-ICH. Otherwise, the Node B may use all the CD signatures on CD/CA-ICH.

If the COMMON TRANSPORT CHANNEL SETUP REQUEST message includes *CD Sub Channel Numbers* IE, the Node B may use only the given CD Sub Channels on CD/CA-ICH. Otherwise, the Node B may use all the CD Sub Channels on CD/CA-ICH.

If the COMMON TRANSPORT CHANNEL SETUP REQUEST message includes *Channel Request Parameters* IE, the Node B shall use the parameters to distinguish the PCPCHs.

If the COMMON TRANSPORT CHANNEL SETUP REQUEST message includes *AP Sub Channel Number* IE in *Channel Request Parameters* IE, the Node B shall use only these AP sub channel number to distinguish the configured PCPCH. Otherwise all AP subchannel numbers are used to distinguish the configured PCPCH.

If the COMMON TRANSPORT CHANNEL SETUP REQUEST message includes *AP Sub Channel Number* IE in *SF Request Parameters* IE, the Node B shall use only these AP sub channel number to distinguish the requested Spreading Factors. Otherwise all AP subchannel numbers are used to distinguish the configured Spreading Factor.

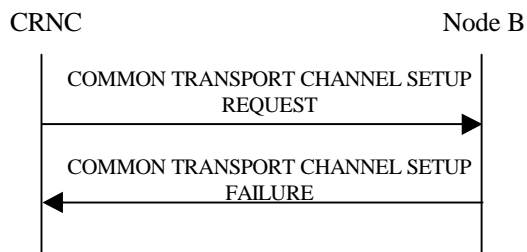
**General:**

After successfully configuring the requested common transport channels and the common physical channels, the Node B shall store the value of *Configuration Generation ID* IE and it shall respond with the COMMON TRANSPORT CHANNEL SETUP RESPONSE message with the *Common Transport Channel ID* IE, the *Binding ID* IE and the *Transport Layer Address* IE for the configured common transport channels.

If the COMMON TRANSPORT CHANNEL SETUP REQUEST message includes the *Transport Layer Address* and *Binding ID* IEs, the Node B may use the transport layer address and the binding identifier received from the CRNC when establishing a transport bearer for the indicated common transport channels.

After a successful procedure and once the transport bearers are established, the configured common transport channels and the common physical channels shall adopt the state Enabled [6] in the Node B and the common physical channels exist on the Uu interface.

### 8.2.1.3 Unsuccessful Operation



**Figure 2: Common Transport Channel Setup procedure, Unsuccessful Operation**

If the Node B is not able to support all or part of the configuration, it shall reject the configuration of all the channels in the COMMON TRANSPORT CHANNEL SETUP REQUEST message. The channels in the COMMON TRANSPORT CHANNEL SETUP REQUEST message shall remain in the same state as prior to the procedure. The *Cause* IE shall be set to an appropriate value. The value of *Configuration Generation ID* IE from the COMMON TRANSPORT CHANNEL SETUP REQUEST message shall not be stored.

If the configuration was unsuccessful, the Node B shall respond with a COMMON TRANSPORT CHANNEL SETUP FAILURE message.

Typical cause values are as follows:

**Radio Network Layer Cause:**

- Cell not available
- Power level not supported
- Node B Resources unavailable
- Requested Tx Diversity Mode not supported
- UL SF not supported
- DL SF not supported
- Common Transport Channel Type not supported

**Transport Layer Cause:**

- Transport Resources Unavailable

**Miscellaneous Cause:**

- O&M Intervention
- Control processing overload
- HW failure

### 8.2.1.4 Abnormal Conditions

If the COMMON TRANSPORT CHANNEL SETUP REQUEST message contains the *Secondary CCPCH* IE, and that IE contains [FDD - neither the *FACH Parameters* IE nor the *PCH Parameters* IE] [TDD – neither the *FACH* IE nor the *PCH* IE], the Node B shall reject the procedure using the COMMON TRANSPORT CHANNEL SETUP FAILURE message.

[FDD - If the COMMON TRANSPORT CHANNEL SETUP REQUEST message contains the *CD Sub Channel Numbers* IE, but the *CD Signatures* IE is not present, then the Node B shall reject the procedure using the COMMON TRANSPORT CHANNEL SETUP FAILURE message.]

[TDD - If the *FACH CCTrCH Id* IE or the *PCH CCTrCH Id* IE does not equal the *SCCPCH CCTrCH Id* IE, the Node B shall regard the Common Transport Channel Setup procedure as having failed and the Node B shall send the COMMON TRANSPORT CHANNEL SETUP FAILURE message to the CRNC.]

[TDD - If the *TDD Physical Channel Offset* IE, the *Repetition Period* IE, and the *Repetition Length* IE are not equal for each SCCPCH configured within the CCTrCH, the Node B shall regard the Common Transport Channel Setup procedure as having failed and the Node B shall send the COMMON TRANSPORT CHANNEL SETUP FAILURE message to the CRNC.]

[1.28Mcps TDD - If the *Common Transport Channel ID* IE, and the *Transport Format Set* IE are not equal for each RACH configured in PRACH, the Node B shall regard the Common Transport Channel Setup procedure as having failed and the Node B shall send the COMMON TRANSPORT CHANNEL SETUP FAILURE message to the CRNC.]

If the state is already Enabled or Disabled [6] for at least one channel in the COMMON TRANSPORT CHANNEL SETUP REQUEST message which is received, the Node B shall reject the configuration of all channels with the *Cause* IE set to "Message not compatible with receiver state".

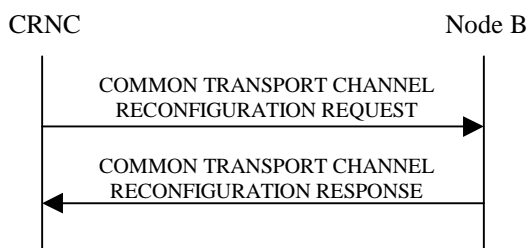
If the COMMON TRANSPORT CHANNEL SETUP REQUEST message contains the *Transport Layer Address* IE or the *Binding ID* IE, and not both are present for a transport channel intended to be established, the Node B shall reject the procedure using the COMMON TRANSPORT CHANNEL SETUP FAILURE message.

## 8.2.2 Common Transport Channel Reconfiguration

### 8.2.2.1 General

This procedure is used for reconfiguring common transport channels and/or common physical channels, while they still might be in operation.

### 8.2.2.2 Successful Operation



**Figure 3: Common Transport Channel Reconfiguration, Successful Operation**

The procedure is initiated with a COMMON TRANSPORT CHANNEL RECONFIGURATION REQUEST message sent from the CRNC to the Node B using the Node B Control Port.

One message can configure only one of the following combinations:

- [FDD - FACHs, one PCH and/or one PICH related to one Secondary CCPCH], or
- [TDD - one CCTrCH consisting of Secondary CCPCHs and FACHs, PCH with the corresponding PICH related to that group of Secondary CCPCHs], or
- one RACH and/or one AICH[FDD] ) and/or one FPACH[1.28Mcps TDD] related to one PRACH, or
- [FDD - one CPCH and/or one AP-AICH and/or one CD/CA-ICH related to one CPCH].

#### SCCPCH:

[TDD - If the COMMON TRANSPORT CHANNEL RECONFIGURATION REQUEST message includes the *SCCPCH Power* IE, the Node B shall reconfigure the maximum power that the indicated S-CCPCH shall use.]

#### FACH:

If the *FACH Parameters* IE is present, the Node B shall reconfigure the indicated FACH(s).

[FDD - If the COMMON TRANSPORT CHANNEL RECONFIGURATION REQUEST message includes the *Max FACH Power* IE, the Node B shall reconfigure the maximum power that the indicated FACH may use.]

[1.28Mcps TDD - If the COMMON TRANSPORT CHANNEL RECONFIGURATION REQUEST message includes the *Max FACH Power* IE, the Node B shall reconfigure the maximum power that the indicated FACH may use.]

If the COMMON TRANSPORT CHANNEL RECONFIGURATION REQUEST message includes the *ToAWS* IE, the Node B shall reconfigure the time of arrival window startpoint that the indicated FACH shall use.

If the COMMON TRANSPORT CHANNEL RECONFIGURATION REQUEST message includes the *ToAWE* IE, the Node B shall reconfigure the time of arrival window endpoint that the indicated FACH shall use.

#### **PCH:**

If the *PCH Parameters* IE is present, the Node B shall reconfigure the indicated PCH.

[FDD - If the COMMON TRANSPORT CHANNEL RECONFIGURATION REQUEST message includes the *PCH Power* IE, the Node B shall reconfigure the power that the PCH shall use.]

[1.28Mcps TDD - If the COMMON TRANSPORT CHANNEL RECONFIGURATION REQUEST message includes the *PCH Power* IE, the Node B shall reconfigure the power that the PCH shall use.]

If the COMMON TRANSPORT CHANNEL RECONFIGURATION REQUEST message includes the *ToAWS* IE, the Node B shall reconfigure the time of arrival window startpoint that the PCH shall use.

If the COMMON TRANSPORT CHANNEL RECONFIGURATION REQUEST message includes the *ToAWE* IE, the Node B shall reconfigure the time of arrival window endpoint that the PCH shall use.

#### **PICH:**

If the *PICH Parameters* IE is present, the Node B shall reconfigure the indicated PICH.

If the COMMON TRANSPORT CHANNEL RECONFIGURATION REQUEST message includes the *PICH Power* IE, the Node B shall reconfigure the power that the PICH shall use.

#### **[FDD - PRACH]:**

If the *PRACH Parameters* IE is present, the Node B shall reconfigure the indicated PRACH(s).

If the COMMON TRANSPORT CHANNEL RECONFIGURATION REQUEST message includes the *Preamble Signatures* IE, the Node B shall reconfigure the preamble signatures that the indicated PRACH shall use.

If the COMMON TRANSPORT CHANNEL RECONFIGURATION REQUEST message includes the *Allowed Slot Format Information* IE, the Node B shall reconfigure the slot formats that the indicated PRACH shall use.

If the COMMON TRANSPORT CHANNEL RECONFIGURATION REQUEST message includes the *RACH Sub Channel Numbers* IE, the Node B shall reconfigure the sub channel numbers that the indicated PRACH shall use.

#### **[FDD - AICH]:**

If the *AICH Parameters* IE is present, the Node B shall reconfigure the indicated AICH(s).

If the COMMON TRANSPORT CHANNEL RECONFIGURATION REQUEST message includes the *AICH Power* IE, the Node B shall reconfigure the power that the indicated AICH shall use.

#### **[FDD - CPCH]:**

If the *CPCH Parameters* IE is present, the Node B shall reconfigure the indicated CPCH.

If the COMMON TRANSPORT CHANNEL RECONFIGURATION REQUEST message includes the *UL SIR* IE, the Node B shall reconfigure the UL SIR for the UL power control for the indicated CPCH.

If the COMMON TRANSPORT CHANNEL RECONFIGURATION REQUEST message includes the *Initial DL Transmission Power* IE, the Node B shall reconfigure the Initial DL Transmission Power for the indicated CPCH.

If the COMMON TRANSPORT CHANNEL RECONFIGURATION REQUEST message includes the *Maximum DL Power* IE, the Node B shall apply this value to the new configuration of the indicated CPCH and never transmit with a higher power on any DL PCPCHs once the new configuration is being used.

If the COMMON TRANSPORT CHANNEL RECONFIGURATION REQUEST message includes the *Minimum DL Power* IE, the Node B shall apply this value to the new configuration of the indicated CPCH and never transmit with a lower power on any DL PCPCHs once the new configuration is being used.

**[FDD - AP-AICH]:**

If the *AP-AICH Parameters* IE is present, the Node B shall reconfigure the indicated AP-AICH.

If the COMMON TRANSPORT CHANNEL RECONFIGURATION REQUEST message includes the *AP-AICH Power* IE, the Node B shall reconfigure the power that the AP-AICH shall use.

If the COMMON TRANSPORT CHANNEL RECONFIGURATION REQUEST message includes the *CSICH Power* IE, the Node B shall reconfigure the power that the CSICH shall use.

**[FDD - CD/CA-ICH]:**

If the *CD/CA-ICH Parameters* IE is present, the Node B shall reconfigure the indicated CD/CA-ICH.

If the COMMON TRANSPORT CHANNEL RECONFIGURATION REQUEST message includes the *CD/CA-AICH Power* IE, the Node B shall reconfigure the power that the CD/CA-AICH shall use.

**[1.28Mcps TDD - FPACH]:**

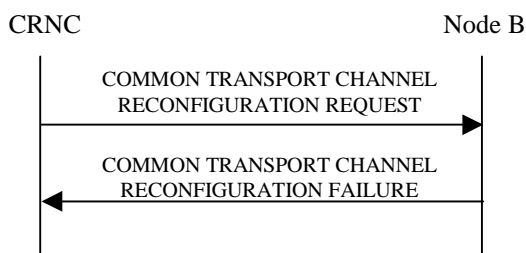
If the *FPACH Parameters* IE is included, the Node B shall reconfigure the indicated FPACH.

If the COMMON TRANSPORT CHANNEL RECONFIGURATION REQUEST message includes the *Max FPACH Power* IE, the Node B shall reconfigure the power that the FPACH shall use.

**General:**

After a successful procedure, the channels will have adopted the new configuration in the Node B. The channels in the COMMON TRANSPORT CHANNEL RECONFIGURATION REQUEST message shall remain in the same state as prior to the procedure. The Node B shall store the value of *Configuration Generation ID* IE and the Node B shall respond with the COMMON TRANSPORT CHANNEL RECONFIGURATION RESPONSE message.

8.2.2.3 Unsuccessful Operation



**Figure 4: Common Transport Channel Reconfiguration procedure, Unsuccessful Operation**

If the Node B is not able to support all or part of the configuration, it shall reject the configuration of all the channels in the COMMON TRANSPORT CHANNEL RECONFIGURATION REQUEST message. The channels in the COMMON TRANSPORT CHANNEL RECONFIGURATION REQUEST message shall remain in the same state as prior to the procedure. The *Cause* IE shall be set to an appropriate value. The value of *Configuration Generation ID* IE from the COMMON TRANSPORT CHANNEL RECONFIGURATION REQUEST message shall not be stored.

If the configuration was unsuccessful, the Node B shall respond with the COMMON TRANSPORT CHANNEL RECONFIGURATION FAILURE message.

Typical cause values are as follows:

**Radio Network Layer Cause:**

- Cell not available
- Power level not supported
- Node B Resources unavailable

**Transport Layer Cause:**

- Transport Resources Unavailable

**Miscellaneous Cause:**

- O&M Intervention
- Control processing overload
- HW failure

8.2.2.4 Abnormal Conditions

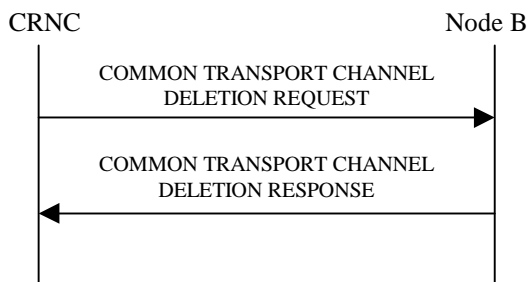
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8.2.3 Common Transport Channel Deletion

8.2.3.1 General

This procedure is used for deleting common physical channels and common transport channels.

8.2.3.2 Successful Operation



**Figure 5: Common Transport Channel Deletion procedure, Successful Operation**

The procedure is initiated with a COMMON TRANSPORT CHANNEL DELETION REQUEST message sent from the CRNC to the Node B using the Node B Control Port.

**Secondary CCPCH:**

If the *Common Physical Channel ID* IE contained in the COMMON TRANSPORT CHANNEL DELETION REQUEST message indicates a Secondary CCPCH, the Node B shall delete the indicated channel and the FACHs and PCH supported by that Secondary CCPCH. If there is a PCH that is deleted, the PICH associated with that PCH shall also be deleted.

**PRACH:**

If the *Common Physical Channel ID* IE contained in the COMMON TRANSPORT CHANNEL DELETION REQUEST message indicates a PRACH, the Node B shall delete the indicated channel and the RACH supported by the PRACH. [FDD - The AICH associated with the RACH shall also be deleted.]

**[FDD - PCPCHs]:**

If the *Common Physical Channel ID* IE contained in the COMMON TRANSPORT CHANNEL DELETION REQUEST message indicates one of the PCPCHs for a CPCH, the Node B shall delete all PCPCHs associated with the

indicated channel and the CPCH supported by these PCPCHs. The AP-AICH and CD/CA-ICH associated with the CPCH shall also be deleted.

**General:**

[TDD - If the requested common physical channel is a part of a CCTrCH, all common transport channels and all common physical channels associated with this CCTrCH shall be deleted.]

After a successful procedure, the channels are deleted in the Node B. The channels in the COMMON TRANSPORT CHANNEL DELETION REQUEST message shall be set to state Not Existing ref. [6]. The Node B shall store the received value of the *Configuration Generation ID* IE and respond with the COMMON TRANSPORT CHANNEL DELETION RESPONSE message.

**8.2.3.3 Unsuccessful Operation**

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**8.2.3.4 Abnormal Conditions**

If the C-ID in the COMMON TRANSPORT CHANNEL DELETION REQUEST message is not existing in the Node B or the Common Physical Channel ID does not exist in the Cell, the Node B shall respond with the COMMON TRANSPORT CHANNEL DELETION RESPONSE message.

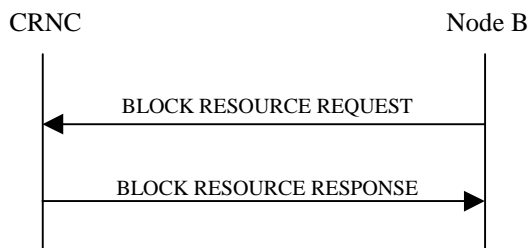
**8.2.4 Block Resource**

**8.2.4.1 General**

The Node B initiates this procedure to request the CRNC to prohibit the usage of the specified logical resources.

The logical resource that can be blocked is a cell.

**8.2.4.2 Successful Operation**



**Figure 6: Block Resource procedure, Successful Operation**

The procedure is initiated with a BLOCK RESOURCE REQUEST message sent from the Node B to the CRNC using the Node B Control Port.

Upon reception of the BLOCK RESOURCE REQUEST message, the CRNC shall prohibit the use of the indicated logical resources according to the *Blocking Priority Indicator* IE.

If the *Blocking Priority Indicator* IE in the BLOCK RESOURCE REQUEST message indicates "High Priority", the CRNC shall prohibit the use of the logical resources immediately.

If the *Blocking Priority Indicator* IE in the BLOCK RESOURCE REQUEST message indicates "Normal Priority", the CRNC shall prohibit the use of the logical resources if the resources are idle or immediately upon expiry of the shutdown timer specified by the *Shutdown Timer* IE in the BLOCK RESOURCE REQUEST message. New traffic shall not be allowed to use the logical resources while the CRNC waits for the resources to become idle and once the resources are blocked.



If the *Blocking Priority Indicator* IE in the BLOCK RESOURCE REQUEST message indicates "Low Priority", the CRNC shall prohibit the use of the logical resources when the resources become idle. New traffic shall not be allowed to use the logical resources while the CRNC waits for the resources to become idle and once the resources are blocked.

If the resources are successfully blocked, the CRNC shall respond with a BLOCK RESOURCE RESPONSE message. Upon reception of the BLOCK RESOURCE RESPONSE message, the Node B may disable [3.84Mcps TDD - SCH], [FDD - the Primary SCH, the Secondary SCH, the Primary CPICH, if present the Secondary CPICH(s)], [1.28Mcps TDD - DwPCH] and the Primary CCPCH. The other logical resources in the cell shall be considered as blocked.

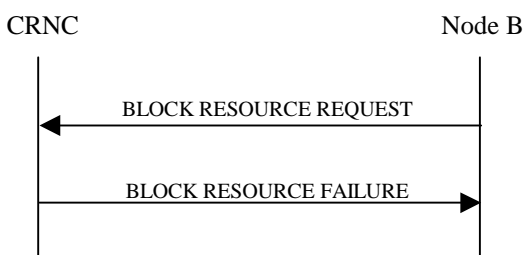
Reconfiguration of logical resources and change of System Information can be done, even when the logical resources are blocked.

**Interactions with the Unblock Resource procedure:**

If the UNBLOCK RESOURCE INDICATION message is received by the CRNC while a Block Resource procedure on the same logical resources is in progress, the CRNC shall cancel the Block Resource procedure and proceed with the Unblock Resource procedure.

If the BLOCK RESOURCE RESPONSE message or the BLOCK RESOURCE FAILURE message is received by the Node B after the Node B has initiated an Unblock Resource procedure on the same logical resources as the ongoing Block Resource procedure, the Node B shall ignore the response to the Block Resource procedure.

**8.2.4.3 Unsuccessful Operation**



**Figure 7: Block Resource procedure, Unsuccessful Operation**

The CRNC may reject the request to block the logical resources, in which case the logical resources will remain unaffected and the CRNC shall respond to the Node B with the BLOCK RESOURCE FAILURE message. Upon reception of the BLOCK RESOURCE FAILURE message, the Node B shall leave the logical resources in the state that they were in prior to the start of the Block Resource procedure.

Typical cause values are as follows:

**Miscellaneous Cause:**

- O&M Intervention
- Control processing overload
- HW failure

**Radio Network Layer Cause:**

- Priority transport channel established

**8.2.4.4 Abnormal Conditions**

-

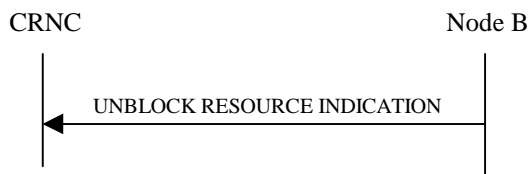
## 8.2.5 Unblock Resource

### 8.2.5.1 General

The Node B initiates this procedure to indicate to the CRNC that logical resources are now unblocked.

The logical resource that can be unblocked is a cell.

### 8.2.5.2 Successful Operation



**Figure 8: Unblock Resource procedure, Successful Operation**

The procedure is initiated with an UNBLOCK RESOURCE INDICATION message sent from the Node B to the CRNC using the Node B Control Port. The Node B shall enable [3.84Mcps TDD - SCH], [FDD - the Primary SCH, the Secondary SCH, the Primary CPICH, the Secondary CPICH(s) (if present)], [1.28Mcps TDD - DwPCH] and the Primary CCPCH that had been disabled due to the preceding Block Resource procedure before sending the UNBLOCK RESOURCE INDICATION message. Upon reception of the UNBLOCK RESOURCE INDICATION message, the CRNC may permit the use of the logical resources.

All physical channels and transport channels associated to the cell that is unblocked are also unblocked.

### 8.2.5.3 Abnormal Conditions

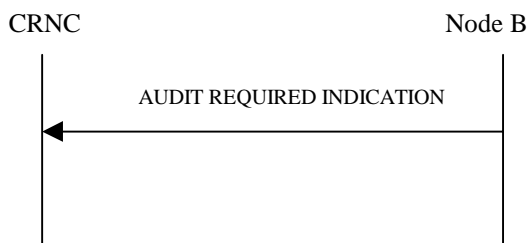
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## 8.2.6 Audit Required

### 8.2.6.1 General

The Node B initiates this procedure to request the CRNC to perform an audit of the logical resources at the Node B. This procedure is used to indicate a possible misalignment of state or configuration information.

### 8.2.6.2 Successful Operation



**Figure 9: Audit Required procedure, Successful Operation**

The procedure is initiated with an AUDIT REQUIRED INDICATION message sent from the Node B to the CRNC using the Node B Control Port.

If the Node B cannot ensure alignment of the state or configuration information, it should initiate the Audit Required procedure.

Upon receipt of the AUDIT REQUIRED INDICATION message, the CRNC should initiate the Audit procedure.

### 8.2.6.3 Abnormal Conditions

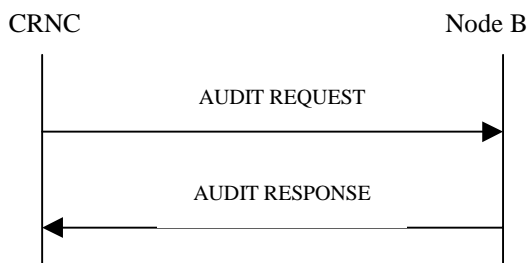
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## 8.2.7 Audit

### 8.2.7.1 General

This procedure is executed by the CRNC to perform an audit of the configuration and status of the logical resources in the Node B. A complete audit of a Node B is performed by one or more Audit procedures, together performing an audit sequence. The audit may cause the CRNC to re-synchronise the Node B to the status of logical resources known by the CRNC, that the Node B can support.

### 8.2.7.2 Successful Operation



**Figure 10: Audit procedure, Successful Operation**

The procedure is initiated with an AUDIT REQUEST message sent from the CRNC to the Node B using the Node B Control Port.

If the *Start Of Audit Sequence Indicator* IE in the AUDIT REQUEST message is set to "start of audit sequence" a new audit sequence is started, any ongoing audit sequence shall be aborted and the Node B shall provide (part of the) audit information. If the *Start Of Audit Sequence Indicator* IE is set to "not start of audit sequence", the Node B shall provide (part of) the remaining audit information not already provided during this audit sequence.

If the information provided in the AUDIT RESPONSE message completes the audit sequence, the Node B shall set the *End Of Audit Sequence Indicator* IE in the AUDIT RESPONSE message to "End of Audit Sequence". If not all audit information has been provided yet as part of the ongoing audit sequence, the Node B shall set the *End Of Audit Sequence Indicator* IE in the AUDIT RESPONSE message to "Not End of Audit Sequence".

#### Information Provided In One Audit Sequence:

The Node B shall include one *Local Cell Information* IE for each local cell present in the Node B. The Node B shall include the *Maximum DL Power Capability* IE, the *Minimum Spreading Factor* IE and the *Minimum DL Power Capability* IE when any of those values are known by the Node B. The Node B shall include the *HSDPA Capability* IE set to "HSDPA Capable" for every HSDPA-capable Local Cell. [The Node B shall include the E-DCH Capability IE set to "E-DCH Capable" for every E-DCH-capable Local Cell.](#)

[TDD - The Node B shall include the *Reference Clock Availability* IE to indicate the availability of a Reference clock connected to the Local Cell.]

If the Node B internal resources are pooled for a group of cells, the Node B shall include one *Local Cell Group Information* IE containing the Node B internal resource capacity and the consumption laws per group of cells. If the *UL Capacity Credit* IE is not present in the *Local Cell Group Information* IE, then the internal resource capabilities of the Node B for the Local Cell Group are modelled as shared resources between Uplink and Downlink.

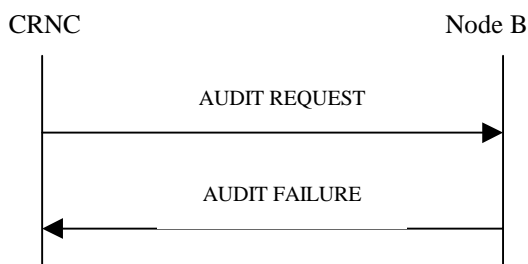
If the Node B internal power resources are pooled for a group of Local Cells, the Node B shall include one *Power Local Cell Group Information* IE containing the Maximum DL Power Capability for each Power Local Cell Group for which this value is known by the Node B. In this case, the Node B shall also include the *Maximum DL Power Capability* IE in the *Local Cell Information* IE for all the Local Cells belonging to a Power Local Cell Group reported in the *Power Local Cell Group Information* IE. Furthermore, the sum of the Maximum DL Power Capability of all the Local Cells belonging to the same Power Local Cell Group shall not exceed the Maximum DL Power Capability of the concerned Power Local Cell Group.

The Node B shall include, for each local cell present in the Node B, the Node B internal resource capability and consumption laws within the *Local Cell Information* IE. If the *UL Capacity Credit* IE is not present in the *Local Cell Information* IE, then the internal resource capabilities of the local cell are modelled as shared resources between Uplink and Downlink. If the Local Cell utilises Node B internal resource capabilities that are pooled for several Local Cell(s), the *Local Cell Group ID* IE shall contain the identity of the used Local Cell Group. If the Local Cell utilises Node B internal power resources that are pooled for several Local Cells, the *Power Local Cell Group ID* IE shall contain the identity of the concerned Power Local Cell Group.

The Node B shall include one *Cell Information* IE for each cell in the Node B and information about all common transport channels and all common physical channels for each cell. If a *Configuration Generation ID* IE for a cell can not be trusted, the Node B shall set this *Configuration Generation ID* IE = "0". The Node B shall include the *HS-DSCH Resources Information* IE for every Cell which has been configured with HS-DSCH resources. The Node B shall include the *E-DCH Resources Information* IE for every Cell which has been configured with E-DCH resources.

The Node B shall also include one *Communication Control Port Information* IE for each Communication Control Port in the Node B.

### 8.2.7.3 Unsuccessful Operation



**Figure 10A: Audit procedure, Unsuccessful Operation**

If the Node B cannot perform an audit of the configuration and status of the logical resources, it shall send a AUDIT FAILURE message with the *Cause* IE set to an appropriate value.

### 8.2.7.4 Abnormal Conditions

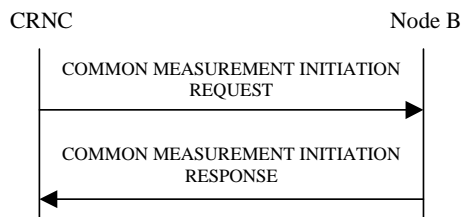
If the Node B receives the AUDIT REQUEST message with the *Start Of Audit Sequence Indicator* IE set to "not start of audit sequence" and there is no ongoing audit sequence, the Node B shall send the AUDIT FAILURE message with the appropriate cause value.

## 8.2.8 Common Measurement Initiation

### 8.2.8.1 General

This procedure is used by a CRNC to request the initiation of measurements on common resources in a Node B.

### 8.2.8.2 Successful Operation



**Figure 11: Common Measurement Initiation procedure, Successful Operation**

The procedure is initiated with a COMMON MEASUREMENT INITIATION REQUEST message sent from the CRNC to the Node B using the Node B Control Port.

Upon reception, the Node B shall initiate the requested measurement according to the parameters given in the request. Unless specified below, the meaning of the parameters are given in other specifications.

[TDD - If the [3.84Mcps TDD - *Time Slot IE*] [1.28Mcps TDD - *Time Slot LCR IE*] is present in the COMMON MEASUREMENT INITIATION REQUEST message, the measurement request shall apply to the requested time slot individually.]

[FDD - If the *Spreading Factor IE* is present in the COMMON MEASUREMENT INITIATION REQUEST message, the measurement request shall apply to the PCPCHs whose minimum allowed spreading factor (Min UL Channelisation Code Length) is equal to the value of the *Spreading Factor IE*.]

If the *Common Measurement Type IE* is not set to "SFN-SFN Observed Time Difference" and the *SFN Reporting Indicator IE* is set to "FN Reporting Required", the *SFN IE* shall be included in the COMMON MEASUREMENT REPORT message or in the COMMON MEASUREMENT RESPONSE message, the latter only in the case the *Report Characteristics IE* is set to "On Demand". The reported SFN shall be the SFN at the time when the measurement value was reported by the layer 3 filter, referred to as point C in the measurement model [25]. If the *Common Measurement Type IE* is set to "SFN-SFN Observed Time Difference", the *SFN Reporting Indicator IE* shall be ignored.

#### Common measurement type:

If the *Common Measurement Type IE* is set to "SFN-SFN Observed Time Difference", then the Node B shall initiate the SFN-SFN Observed Time Difference measurements between the reference cell identified by *C-ID IE* and the neighbouring cells identified by the *UTRAN Cell Identifier(UC-Id) IE* in the *Neighbouring Cell Measurement Information IE*.

If the *Common Measurement Type IE* is set to "Received Total Wide Band Power for Cell Portion", "Transmitted Carrier Power for Cell Portion" or "Transmitted carrier power of all codes not used for HS-PDSCH or HS-SCCH transmission for Cell Portion", the Node B shall initiate the corresponding measurements for all the cell portions which are configured under the cell indicated by *C-ID IE* in the COMMON MEASUREMENT INITIATION REQUEST message.

#### Report characteristics:

The *Report Characteristics IE* indicates how the reporting of the measurement shall be performed. See also Annex B.

If the *Report Characteristics IE* is set to "On Demand" and if the *SFN IE* is not provided, the Node B shall return the result of the requested measurement immediately. If the *SFN IE* is provided, it indicates the frame for which the measurement value shall be provided. The provided measurement value shall be the one reported by the layer 3 filter, referred to as point C in the measurement model [25].

If the *Report Characteristics IE* is set to "Periodic", the Node B shall periodically initiate a Common Measurement Reporting procedure for this measurement, with the requested report frequency. If the *Common Measurement Type IE* is set to "SFN-SFN Observed Time Difference", all the available measurement results shall be reported in the *Successful Neighbouring Cell SFN-SFN Observed Time Difference Measurement Information IE* in the *SFN-SFN Measurement Value Information IE* and the Node B shall indicate in the *Unsuccessful Neighbouring Cell SFN-SFN Observed Time Difference Measurement Information IE* all the remaining neighbouring cells with no measurement result available in the Common Measurement Reporting procedure. If the *SFN IE* is provided, it indicates the frame for which the first

measurement value of a periodic reporting shall be provided. The provided measurement value shall be the one reported by the layer 3 filter, referred to as point C in the measurement model [25].

If the *Report Characteristics* IE is set to "Event A", the Node B shall initiate the Common Measurement Reporting procedure when the measured entity rises above the requested threshold and stays there for the requested hysteresis time. If the *Measurement Hysteresis Time* IE is not included, the Node B shall use the value zero for the hysteresis time. If the *Common Measurement Type* IE is set to "HS-DSCH Required Power", the measured entity to be considered is the sum of the HS-DSCH Required Power measurements for each priority class. If the *Common Measurement Type* IE is set to "Received Total Wide Band Power for Cell Portion", "Transmitted Carrier Power for Cell Portion" or "Transmitted carrier power of all codes not used for HS-PDSCH or HS-SCCH transmission for Cell Portion", the measurement entity to be considered is the corresponding measurement for each cell portion.

If the *Report Characteristics* IE is set to "Event B", the Node B shall initiate the Common Measurement Reporting procedure when the measured entity falls below the requested threshold and stays there for the requested hysteresis time. If the *Measurement Hysteresis Time* IE is not included, the Node B shall use the value zero for the hysteresis time. If the *Common Measurement Type* IE is set to "HS-DSCH Required Power", the measured entity to be considered is the sum of the HS-DSCH Required Power measurements for each priority class. If the *Common Measurement Type* IE is set to "Received Total Wide Band Power for Cell Portion", "Transmitted Carrier Power for Cell Portion" or "Transmitted carrier power of all codes not used for HS-PDSCH or HS-SCCH transmission for Cell Portion", the measurement entity to be considered is the corresponding measurement for each cell portion.

If the *Report Characteristics* IE is set to "Event C", the Node B shall initiate the Common Measurement Reporting procedure when the measured entity rises by an amount greater than the requested threshold within the requested time. After having reported this type of event, the next C event reporting for the same measurement cannot be initiated before the rising time specified by the *Measurement Change Time* IE has elapsed since the previous event reporting. If the *Common Measurement Type* IE is set to "Received Total Wide Band Power for Cell Portion", "Transmitted Carrier Power for Cell Portion" or "Transmitted carrier power of all codes not used for HS-PDSCH or HS-SCCH transmission for Cell Portion", the measurement entity to be considered is the corresponding measurement for each cell portion.

If the *Report Characteristics* IE is set to "Event D", the Node B shall initiate the Common Measurement Reporting procedure when the measured entity falls by an amount greater than the requested threshold within the requested time. After having reported this type of event, the next D event reporting for the same measurement cannot be initiated before the falling time specified by the *Measurement Change Time* IE has elapsed since the previous event reporting. If the *Common Measurement Type* IE is set to "Received Total Wide Band Power for Cell Portion", "Transmitted Carrier Power for Cell Portion" or "Transmitted carrier power of all codes not used for HS-PDSCH or HS-SCCH transmission for Cell Portion", the measurement entity to be considered is the corresponding measurement for each cell portion.

If the *Report Characteristics* IE is set to "Event E", the Node B shall initiate the Common Measurement Reporting procedure when the measured entity rises above the 'Measurement Threshold 1' and stays there for the 'Measurement Hysteresis Time' (Report A). When the conditions for Report A are met and the *Report Periodicity* IE is provided, the Node B shall initiate the Common Measurement Reporting procedure periodically. If the conditions for Report A have been met and the measured entity falls below the 'Measurement Threshold 2' and stays there for the 'Measurement Hysteresis Time', the Node B shall initiate the Common Measurement Reporting procedure (Report B) as well as terminate any corresponding periodic reporting. If the *Measurement Threshold 2* IE is not present, the Node B shall use the value of the *Measurement Threshold 1* IE instead. If the *Measurement Hysteresis Time* IE is not included, the Node B shall use the value zero as hysteresis times for both Report A and Report B. If the *Common Measurement Type* IE is set to "HS-DSCH Required Power", the measured entity to be considered is the sum of the HS-DSCH Required Power measurements for each priority class. If the *Common Measurement Type* IE is set to "Received Total Wide Band Power for Cell Portion", "Transmitted Carrier Power for Cell Portion" or "Transmitted carrier power of all codes not used for HS-PDSCH or HS-SCCH transmission for Cell Portion", the measurement entity to be considered is the corresponding measurement for each cell portion.

If the *Report Characteristics* IE is set to "Event F", the Node B shall initiate the Common Measurement Reporting procedure when the measured entity falls below the 'Measurement Threshold 1' and stays there for the 'Measurement Hysteresis Time' (Report A). When the conditions for Report A are met and the *Report Periodicity* IE is provided the Node B shall also initiate the Common Measurement Reporting procedure periodically. If the conditions for Report A have been met and the measured entity rises above the 'Measurement Threshold 2' and stays there for the 'Measurement Hysteresis Time', the Node B shall initiate the Common Measurement Reporting procedure (Report B) as well as terminate any corresponding periodic reporting. If the *Measurement Threshold 2* IE is not present, the Node B shall use the value of the *Measurement Threshold 1* IE instead. If the *Measurement Hysteresis Time* IE is not included, the Node B shall use the value zero as hysteresis times for both Report A and Report B. If the *Common Measurement Type* IE is

set to "HS-DSCH Required Power", the measured entity to be considered is the sum of the HS-DSCH Required Power measurements for each priority class. If the *Common Measurement Type* IE is set to "Received Total Wide Band Power for Cell Portion", "Transmitted Carrier Power for Cell Portion" or "Transmitted carrier power of all codes not used for HS-PDSCH or HS-SCCH transmission for Cell Portion", the measurement entity to be considered is the corresponding measurement for each cell portion.

If the *Report Characteristics* IE is set to "On Modification" and if the *SFN* IE is not provided, the Node B shall report the result of the requested measurement immediately. If the *SFN* IE is provided, it indicates the frame for which the measurement value shall be provided. The provided measurement value shall be the one reported by the layer 3 filter, referred to as point C in the measurement model [25]. Then, the Node B shall initiate the Common Measurement Reporting procedure in accordance to the following conditions:

1. If the *Common Measurement Type* IE is set to "UTRAN GPS Timing of Cell Frames for UE Positioning":

- If the *T<sub>UTRAN-GPS</sub> Change Limit* IE is included in the *T<sub>UTRAN-GPS</sub> Measurement Threshold Information* IE, the Node B shall each time a new measurement result is received after point C in the measurement model [25], calculate the change of  $T_{UTRAN-GPS}$  value ( $F_n$ ). The Node B shall initiate the Common Measurement Reporting procedure and set  $n$  equal to zero when the absolute value of  $F_n$  rises above the threshold indicated by the *T<sub>UTRAN-GPS</sub> Change Limit* IE. The change of  $T_{UTRAN-GPS}$  value ( $F_n$ ) is calculated according to the following:

$$F_n = 0 \text{ for } n = 0$$

$$F_n = (M_n - M_{n-1}) \bmod 3715891200000 - ((SFN_n - SFN_{n-1}) \bmod 4096) * 10 * 3.84 * 10^3 * 16 + F_{n-1}$$

for  $n > 0$

$F_n$  is the change of the  $T_{UTRAN-GPS}$  value expressed in unit [1/16 chip] when  $n$  measurement results have been received after the first Common Measurement Reporting at initiation or after the last event was triggered.

$M_n$  is the latest measurement result received after point C in the measurement model [25], measured at  $SFN_n$ .

$M_{n-1}$  is the previous measurement result received after point C in the measurement model [25], measured at  $SFN_{n-1}$ .

$M_j$  is the first measurement result received after point C in the measurement model [25], after the first Common Measurement Reporting at initiation or after the last event was triggered.

$M_0$  is equal to the value reported in the first Common Measurement Reporting at initiation or in the Common Measurement Reporting when the event was triggered.

- If the *Predicted T<sub>UTRAN-GPS</sub> Deviation Limit* IE is included in the *T<sub>UTRAN-GPS</sub> Measurement Threshold Information* IE, the Node B shall each time a new measurement result is received after point C in the measurement model [25], update the  $P_n$  and  $F_n$ . The Node B shall initiate the Common Measurement Reporting procedure and set  $n$  equal to zero when  $F_n$  rises above the threshold indicated by the *Predicted T<sub>UTRAN-GPS</sub> Deviation Limit* IE. The  $P_n$  and  $F_n$  are calculated according to the following:

$$P_n = b \text{ for } n = 0$$

$$P_n = ((a/16) * ((SFN_n - SFN_{n-1}) \bmod 4096) / 100 + ((SFN_n - SFN_{n-1}) \bmod 4096) * 10 * 3.84 * 10^3 * 16 + P_{n-1}) \bmod 3715891200000 \quad \text{for } n > 0$$

$$F_n = \min((M_n - P_n) \bmod 3715891200000, (P_n - M_n) \bmod 3715891200000) \quad \text{for } n > 0$$

$P_n$  is the predicted  $T_{UTRAN-GPS}$  value when  $n$  measurement results have been received after the first Common Measurement Reporting at initiation or after the last event was triggered.

$a$  is the last reported  $T_{UTRAN-GPS}$  Drift Rate value.

$b$  is the last reported  $T_{UTRAN-GPS}$  value.

$F_n$  is the deviation of the last measurement result from the predicted  $T_{UTRAN-GPS}$  value ( $P_n$ ) when  $n$  measurements have been received after the first Common Measurement Reporting at initiation or after the last event was triggered.

$M_n$  is the latest measurement result received after point C in the measurement model [25], measured at  $SFN_n$ .

$M_j$  is the first measurement result received after point C in the measurement model [25], after the first Common Measurement Reporting at initiation or after the last event was triggered.

The  $T_{\text{UTRAN-GPS}}$  Drift Rate is determined by the Node B in an implementation-dependent way after point B in the measurement model [26].

2. If the *Common Measurement Type* IE is set to "SFN-SFN Observed Time Difference":

- If the *SFN-SFN Change Limit* IE is included in the *SFN-SFN Measurement Threshold Information* IE, the Node B shall each time a new measurement result is received after point C in the measurement model [25], calculate the change of SFN-SFN value ( $F_n$ ). The Node B shall initiate the Common Measurement Reporting procedure in order to report the particular SFN-SFN measurement which has triggered the event and set n equal to zero when  $F_n$  rises above the threshold indicated by the *SFN-SFN Change Limit* IE. The change of the SFN-SFN value is calculated according to the following:

$$F_n=0 \quad \text{for } n=0$$

$$[\text{FDD} - F_n = (M_n - a) \bmod 614400 \quad \text{for } n>0]$$

$$[\text{TDD} - F_n = (M_n - a) \bmod 40960 \quad \text{for } n>0]$$

$F_n$  is the change of the SFN-SFN value expressed in unit [1/16 chip] when n measurement results have been received after the first Common Measurement Reporting at initiation or after the last event was triggered.

$a$  is the last reported SFN-SFN.

$M_n$  is the latest measurement result received after point C in the measurement model [25], measured at SFN<sub>n</sub>.

$M_j$  is the first measurement result received after point C in the measurement model [25] after the first Common Measurement Reporting at initiation or after the last event was triggered.

- If the *Predicted SFN-SFN Deviation Limit* IE is included in the *SFN-SFN Measurement Threshold Information* IE, the Node B shall each time a new measurement result is received after point C in the measurement model [25], update the  $P_n$  and  $F_n$ . The Node B shall initiate the Common Measurement Reporting procedure in order to report the particular SFN-SFN measurement which has triggered the event and set n equal to zero when the  $F_n$  rises above the threshold indicated by the *Predicted SFN-SFN Deviation Limit* IE. The  $P_n$  and  $F_n$  are calculated according to the following:

$$P_n=b \text{ for } n=0$$

$$[\text{FDD} - P_n = ((a/16) * ((SFN_n - SFN_{n-1}) \bmod 4096)/100 + P_{n-1}) \bmod 614400 \quad \text{for } n>0]$$

$$[\text{FDD} - F_n = \min((M_n - P_n) \bmod 614400, (P_n - M_n) \bmod 614400) \quad \text{for } n>0]$$

$$[\text{TDD} - P_n = ((a/16) * (15*(SFN_n - SFN_{n-1}) \bmod 4096 + (TS_n - TS_{n-1}))/1500 + P_{n-1}) \bmod 40960 \quad \text{for } n>0]$$

$$[\text{TDD} - F_n = \min((M_n - P_n) \bmod 40960, (P_n - M_n) \bmod 40960) \quad \text{for } n>0]$$

$P_n$  is the predicted *SFN-SFN* value when n measurement results have been received after the first Common Measurement Reporting at initiation or after the last event was triggered.

$a$  is the last reported SFN-SFN Drift Rate value.

$b$  is the last reported SFN-SFN value.

$abs$  denotes the absolute value.

$F_n$  is the deviation of the last measurement result from the predicted *SFN-SFN* value ( $P_n$ ) when n measurements have been received after the first Common Measurement Reporting at initiation or after the last event was triggered.

$M_n$  is the latest measurement result received after point C in the measurement model [25], measured at [TDD - the Time Slot TS<sub>n</sub> of] the Frame SFN<sub>n</sub>.



$M_1$  is the first measurement result received after point C in the measurement model [25] after the first Common Measurement Reporting at initiation or after the last event was triggered.

The SFN-SFN Drift Rate is determined by the Node B in an implementation-dependent way after point B in the measurement model [26].

If the *Report Characteristics* IE is not set to "On Demand", the Node B is required to perform reporting for a common measurement object, in accordance with the conditions provided in the COMMON MEASUREMENT INITIATION REQUEST message, as long as the object exists. If no common measurement object(s) for which a measurement is defined exists anymore, the Node B shall terminate the measurement locally, i.e. without reporting this to the CRNC.

If at the start of the measurement, the reporting criteria are fulfilled for any of Event A, Event B, Event E or Event F, the Node B shall initiate the Common Measurement Reporting procedure immediately, and then continue with the measurements as specified in the COMMON MEASUREMENT INITIATION REQUEST message.

#### Higher layer filtering:

The *Measurement Filter Coefficient* IE indicates how filtering of the measurement values shall be performed before measurement event evaluation and reporting.

The averaging shall be performed according to the following formula.

$$F_n = (1 - a) \cdot F_{n-1} + a \cdot M_n$$

The variables in the formula are defined as follows:

$F_n$  is the updated filtered measurement result

$F_{n-1}$  is the old filtered measurement result

$M_n$  is the latest received measurement result from physical layer measurements, the unit used for  $M_n$  is the same unit as the reported unit in the COMMON MEASUREMENT INITIATION RESPONSE, COMMON MEASUREMENT REPORT messages or the unit used in the event evaluation (i.e. same unit as for  $F_n$ )

$a = 1/2^{(k/2)}$ , where  $k$  is the parameter received in the *Measurement Filter Coefficient* IE. If the *Measurement Filter Coefficient* IE is not present,  $a$  shall be set to 1 (no filtering)

In order to initialise the averaging filter,  $F_0$  is set to  $M_1$  when the first measurement result from the physical layer measurement is received.

#### Common measurement accuracy:

If the *Common Measurement Type* IE is set to "UTRAN GPS Timing of Cell Frames for UE Positioning", then the Node B shall use the *UTRAN GPS Timing Measurement Accuracy Class* IE included in the *Common Measurement Accuracy* IE according to the following:

- If the *UTRAN GPS Timing Measurement Accuracy Class* IE indicates "Class A", then the Node B shall perform the measurement with highest supported accuracy within the accuracy classes A, B and C.
- If the *UTRAN GPS Timing Measurement Accuracy Class* IE indicates "Class B", then the Node B shall perform the measurement with highest supported accuracy within the accuracy classes B and C.
- If the *UTRAN GPS Timing Measurement Accuracy Class* IE indicates "Class C", then the Node B shall perform the measurements with the accuracy according to class C.

#### Measurement Recovery Behavior:

If the *Measurement Recovery Behavior* IE is included in the COMMON MEASUREMENT INITIATION REQUEST message, the Node B shall, if Measurement Recovery Behavior is supported, include the *Measurement Recovery Support Indicator* IE in the COMMON MEASUREMENT INITIATION RESPONSE message and perform the Measurement Recovery Behavior as described in subclause 8.2.9.2.

#### Response message:

If the Node B was able to initiate the measurement requested by the CRNC, it shall respond with the COMMON MEASUREMENT INITIATION RESPONSE message sent over the Node B Control Port. The message shall include the same Measurement ID that was used in the measurement request. Only in the case where the *Report Characteristics*

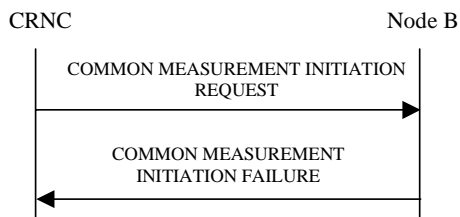
IE is set to "On Demand" or "On Modification", the COMMON MEASUREMENT INITIATION RESPONSE message shall include the *Common Measurement Object Type* IE containing the measurement result and also the *Common Measurement Achieved Accuracy* IE if the *Common Measurement Type* IE is set to "UTRAN GPS Timing of Cell Frames for UE Positioning".

If the *Common Measurement Type* IE is set to "SFN-SFN Observed Time Difference" and the *Report Characteristics* IE is set to "On Demand" or "On Modification", all the available measurement results shall be reported in the *Successful Neighbouring Cell SFN-SFN Observed Time Difference Measurement Information* IE in the *SFN-SFN Measurement Value Information* IE and the Node B shall indicate in the *Unsuccessful Neighbouring Cell SFN-SFN Observed Time Difference Measurement Information* IE all the remaining neighbouring cells with no measurement result available in the COMMON MEASUREMENT INITIATION RESPONSE message. For all available measurement results, the Node B shall include in the *Successful Neighbouring Cell SFN-SFN Observed Time Difference Measurement Information* IE the *SFN-SFN Quality* IE and the *SFN-SFN Drift Rate Quality* IE, if available.

If the *Common Measurement Type* IE is set to "UTRAN GPS Timing of Cell Frames for UE Positioning" and the *Report Characteristics* IE is set to "On Demand" or "On Modification", the Node B shall include in the *T<sub>UTRAN-GPS</sub> Measurement Value Information* IE the *T<sub>UTRAN-GPS</sub> Quality* IE and the *T<sub>UTRAN-GPS</sub> Drift Rate Quality* IE, if available.

If the *Common Measurement Type* IE is set to "Received Total Wide Band Power for Cell Portion", "Transmitted Carrier Power for Cell Portion" or "Transmitted carrier power of all codes not used for HS-PDSCH or HS-SCCH transmission for Cell Portion" and the *Report Characteristics* IE is set to "On Demand", all the available measurement results for each cell portion shall be included in the COMMON MEASUREMENT INITIATION RESPONSE message.

### 8.2.8.3 Unsuccessful Operation



**Figure 12: Common Measurement Initiation procedure, Unsuccessful Operation**

If the requested measurement cannot be initiated, the Node B shall send a COMMON MEASUREMENT INITIATION FAILURE message over the Node B Control Port. The message shall include the same Measurement ID that was used in the COMMON MEASUREMENT INITIATION REQUEST message and the *Cause* IE set to an appropriate value.

Typical cause values are as follows:

**Radio Network Layer Cause:**

- Measurement not supported for the object.
- Measurement Temporarily not Available

### 8.2.8.4 Abnormal Conditions

If the Common Measurement Type received in the *Common Measurement Type* IE, except for the “HS-DSCH Required Power” and the “HS-DSCH Provided Bit Rate”, is not defined in ref. [4] or [5] to be measured on the Common Measurement Object Type received in the COMMON MEASUREMENT INITIATION REQUEST message, the Node B shall regard the Common Measurement Initiation procedure as failed.

[TDD - If the Common Measurement Type requires the Time Slot Information but the [3.84Mcps TDD - *Time Slot* IE] [1.28Mcps TDD - *Time Slot LCR* IE] is not present in the COMMON MEASUREMENT INITIATION REQUEST message, the Node B shall regard the Common Measurement Initiation procedure as failed.]

If the COMMON MEASUREMENT INITIATION REQUEST message contains the *SFN-SFN Measurement Threshold Information* IE (in the *Measurement Threshold* IE contained in the *Report Characteristics* IE) and it does not contain at

least one IE, the Node B shall reject the procedure using the COMMON MEASUREMENT INITIATION FAILURE message.

If the COMMON MEASUREMENT INITIATION REQUEST message contains the  $T_{UTRAN-GPS}$  Measurement Threshold Information IE (in the Measurement Threshold IE contained in the Report Characteristics IE) and it does not contain at least one IE, the Node B shall reject the procedure using the COMMON MEASUREMENT INITIATION FAILURE message.

If the Common Measurement Type IE is set to "SFN-SFN Observed Time Difference", but the Neighbouring Cell Measurement Information IE is not received in the COMMON MEASUREMENT INITIATION REQUEST message, the Node B shall regard the Common Measurement Initiation procedure as failed.

If the Common Measurement Type IE is set to "UTRAN GPS Timing of Cell Frames for UE Positioning", but the  $T_{UTRAN-GPS}$  Measurement Accuracy Class IE in the Common Measurement Accuracy IE is not included in the COMMON MEASUREMENT INITIATION REQUEST message, the Node B shall regard the Common Measurement Initiation procedure as failed.

If the Common Measurement Type IE is not set to "UTRAN GPS Timing of Cell Frames for UE Positioning" and the Common Measurement Accuracy IE is included in the COMMON MEASUREMENT INITIATION REQUEST message, the Node B shall regard the Common Measurement Initiation procedure as failed.

The allowed combinations of the Common Measurement Type and Report Characteristics Type are shown in the table below marked with "X". For not allowed combinations, the Node B shall regard the Common Measurement Initiation procedure as failed.

Table 4: Allowed Common Measurement Type and Report Characteristics Type combinations

Common Measurement Type	Report Characteristics Type								
	On Demand	Periodic	Event A	Event B	Event C	Event D	Event E	Event F	On Modification
Received Total Wide Band Power	X	X	X	X	X	X	X	X	
Transmitted Carrier Power	X	X	X	X	X	X	X	X	
Acknowledged PRACH Preambles	X	X	X	X	X	X	X	X	
UL Timeslot ISCP	X	X	X	X	X	X	X	X	
Acknowledged PCPCH Access Preambles	X	X	X	X	X	X	X	X	
Detected PCPCH Access Preambles	X	X	X	X	X	X	X	X	
UTRAN GPS Timing of Cell Frames for UE Positioning	X	X							X
SFN-SFN Observed Time Difference	X	X							X
Transmitted carrier power of all codes not used for HS-PDSCH or HS-SCCH transmission	X	X	X	X	X	X	X	X	
HS-DSCH Required Power	X	X	X	X			X	X	
HS-DSCH Provided Bit Rate	X	X							
Received Total Wide Band Power for Cell Portion	X	X	X	X	X	X	X	X	
Transmitted Carrier Power for Cell Portion	X	X	X	X	X	X	X	X	
Transmitted carrier power of all codes not used for HS-PDSCH or HS-SCCH transmission for Cell Portion	X	X	X	X	X	X	X	X	
UpPTS interference	X	X	X	X	X	X	X	X	

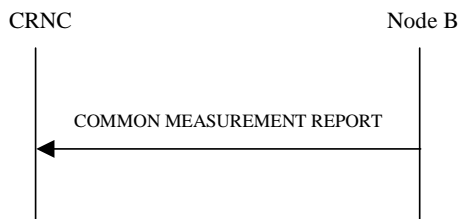
If the *SFN* IE is included in the COMMON MEASUREMENT INITIATION REQUEST message and the *Report Characteristics* IE is other than "Periodic", "On Demand" or "On Modification", the Node B shall regard the Common Measurement Initiation procedure as failed.

## 8.2.9 Common Measurement Reporting

### 8.2.9.1 General

This procedure is used by the Node B to report the result of measurements requested by the CRNC with the Common Measurement Initiation procedure.

### 8.2.9.2 Successful Operation



**Figure 13: Common Measurement Reporting procedure, Successful Operation**

If the requested measurement reporting criteria are met, the Node B shall initiate the Common Measurement Reporting procedure. The COMMON MEASUREMENT REPORT message shall use the Node B Control Port.

The *Measurement ID* IE shall be set to the Measurement ID provided by the CRNC when initiating the measurement with the Common Measurement Initiation procedure.

If the achieved measurement accuracy does not fulfil the given accuracy requirement (see ref.[22] and [23]) or the measurement is temporarily not available in case Measurement Recovery Behavior is supported, the *Common Measurement Value Information* IE shall indicate Measurement not Available. If the Node B was configured to perform the Measurement Recovery Behavior, the Node B shall indicate Measurement Available to the CRNC when the achieved measurement accuracy again fulfils the given accuracy requirement (see ref. [22] and [23]) and include the *Measurement Recovery Report Indicator* IE in the COMMON MEASUREMENT REPORT message if the requested measurement reporting criteria are not met.

For measurements included in the *Successful Neighbouring Cell SFN-SFN Observed Time Difference Measurement Information* IE, the Node B shall include the *SFN-SFN Quality* IE and the *SFN-SFN Drift Rate Quality* IE if available.

If the Common Measurement Type provided by RNC when initiating the measurement with the Common Measurement Initiation procedure was "UTRAN GPS Timing of Cell Frames for UE Positioning", then the Node B shall include in the *T<sub>UTRAN-GPS</sub> Measurement Value Information* IE the *T<sub>UTRAN-GPS</sub> Quality* IE and the *T<sub>UTRAN-GPS</sub> Drift Rate Quality* IE, if available.

For Received Total Wide Band Power for Cell Portion, Transmitted Carrier Power for Cell Portion, Transmitted carrier power of all codes not used for HS-PDSCH or HS-SCCH transmission for Cell Portion measurements, all the available measurement results for each cell portion shall be included in the COMMON MEASUREMENT REPORT message.

### 8.2.9.3 Abnormal Conditions

-

## 8.2.10 Common Measurement Termination

### 8.2.10.1 General

This procedure is used by the CRNC to terminate a measurement previously requested by the Common Measurement Initiation procedure.

### 8.2.10.2 Successful Operation



**Figure 14: Common Measurement Termination procedure, Successful Operation**

This procedure is initiated with a COMMON MEASUREMENT TERMINATION REQUEST message, sent from the CRNC to the Node B using the Node B Control Port.

Upon reception, the Node B shall terminate reporting of common measurements corresponding to the received *Measurement ID IE*.

8.2.10.3 Abnormal Conditions

-

8.2.11 Common Measurement Failure

8.2.11.1 General

This procedure is used by the Node B to notify the CRNC that a measurement previously requested by the Common Measurement Initiation procedure can no longer be reported.

8.2.11.2 Successful Operation



Figure 15: Common Measurement Failure procedure, Successful Operation

This procedure is initiated with a COMMON MEASUREMENT FAILURE INDICATION message, sent from the Node B to the CRNC using the Node B Control Port, to inform the CRNC that a previously requested measurement can no longer be reported. The Node B has locally terminated the indicated measurement.

8.2.11.3 Abnormal Conditions

-

8.2.12 Cell Setup

8.2.12.1 General

This procedure is used to set up a cell in the Node B. The CRNC takes the cell, identified via the *C-ID IE*, into service and uses the resources in the Node B identified via the *Local Cell ID IE*.

8.2.12.2 Successful Operation

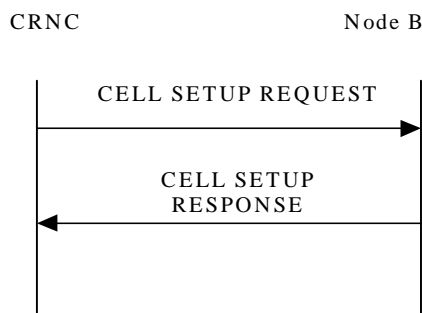


Figure 16: Cell Setup procedure, Successful Operation

The procedure is initiated with a CELL SETUP REQUEST message sent from the CRNC to the Node B using the Node B Control Port. Upon Reception, the Node B shall reserve the necessary resources and configure the new cell according to the parameters given in the message.

[FDD - If the CELL SETUP REQUEST message includes one or more *Secondary CPICH Information IE*, the Node B shall configure and activate the Secondary CPICH(s) in the cell according to received configuration data.]

The *Maximum Transmission Power IE* value shall be stored in the Node B and, at any instance of time, the total maximum output power in the cell shall not be above this value.

[FDD - If the *Closed Loop Timing Adjustment Mode IE* is included in the CELL SETUP REQUEST message, the value shall be stored in the Node B and applied when closed loop Feed-Back mode diversity is used on DPCH.]

[TDD - If the *Reference SFN Offset IE* is included in the CELL SETUP REQUEST message, the Node B where a reference clock is connected shall consider the SFN derived from the synchronisation port and the reference offset for reference time setting. All other Node Bs shall ignore the *Reference SFN Offset IE* if included.]

[FDD - If the *IPDL Parameter Information IE* is included in the CELL SETUP REQUEST message, the parameters defining IPDL shall be stored in the Node B and applied according to the *IPDL Indicator IE* value. If the *Burst Mode Parameters IE* is included in the *IPDL FDD Parameters IE*, the IPDL shall be operated in burst mode according to ref [10].]

[3.84Mcps TDD - If the *IPDL Parameter Information IE* containing *IPDL TDD Parameters IE* is included in the CELL SETUP REQUEST message, the parameters defining IPDL in 3.84Mcps TDD mode shall be stored in the Node B and applied according to the *IPDL Indicator IE* value. If the *Burst Mode Parameters IE* is included in the *IPDL TDD Parameters IE*, the IPDL shall be operated in burst mode according to ref [21].]

[1.28Mcps TDD - If the *IPDL Parameter Information LCR IE* containing *IPDL TDD Parameters LCR IE* is included in the CELL SETUP REQUEST message, the parameters defining IPDL in 1.28Mcps TDD mode shall be stored in the Node B and applied according to the *IPDL Indicator IE* value. If the *Burst Mode Parameters IE* is included in the *IPDL TDD Parameters LCR IE*, the IPDL shall be operated in burst mode according to ref [21].]

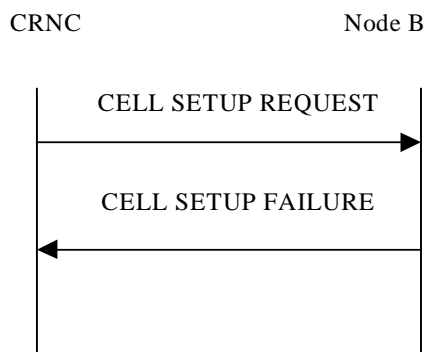
When the cell is successfully configured, the Node B shall store the *Configuration Generation ID IE* value and send a CELL SETUP RESPONSE message as a response.

[FDD - When the cell is successfully configured the CPICH(s), Primary SCH, Secondary SCH, Primary CCPCH and BCH exist.][3.84Mcps TDD - When the cell is successfully configured the SCH, Primary CCPCH and BCH exist and the switching-points for the 3.84Mcps TDD frame structure are defined.] [1.28Mcps TDD - When the cell is successfully configured, the DwPCH, Primary CCPCH and BCH exist and the switching-points for the 1.28Mcps TDD frame structure are defined.] The cell and the channels shall be set to the state Enabled [6].

[FDD - If the CELL SETUP REQUEST message includes the *PDSCH Information IE*, the Node B shall, if supported, store the values included in the *Maximum PDSCH Power IE* and apply the indicated maximum power levels to the PDSCH.]

[TDD - The Node B shall ignore the *DPCH/PUSCH/PRACH Constant Value IEs*.]

### 8.2.12.3 Unsuccessful Operation



**Figure 17: Cell Setup procedure: Unsuccessful Operation**

If the Node B cannot set up the cell according to the information given in CELL SETUP REQUEST message the CELL SETUP FAILURE message shall be sent to the CRNC.

In this case, the cell is Not Existing in the Node B. The Configuration Generation ID shall not be changed in the Node B.

The *Cause* IE shall be set to an appropriate value.

Typical cause values are as follows:

**Radio Network Layer Cause:**

- S-CPICH not supported
- Requested Tx Diversity Mode not supported
- Power level not supported
- Node B Resources unavailable
- IPDL not supported

**Miscellaneous Cause:**

- O&M Intervention
- Control processing overload
- HW failure

### 8.2.12.4 Abnormal Conditions

If the state of the cell already is Enabled or Disabled [6] when the CELL SETUP REQUEST message is received in the Node B, it shall reject the configuration of the cell and all channels in the CELL SETUP REQUEST message by sending a CELL SETUP FAILURE message with the *Cause* IE set to "Message not compatible with receiver state".

If the Local Cell on which the cell is mapped does not belong to a Power Local Cell Group and the requested maximum transmission power indicated by the *Maximum Transmission Power* IE exceeds the Maximum DL Power Capability of the Local Cell, the Node B shall consider the procedure as having failed and send a CELL SETUP FAILURE message to the CRNC.

If the Local Cell on which the cell is mapped belongs to a Power Local Cell Group and the requested maximum transmission power indicated by *Maximum Transmission Power* IE exceeds the Maximum DL Power Capability of the Power Local Cell Group, the Node B shall consider the procedure as having failed and send a CELL SETUP FAILURE message to the CRNC.

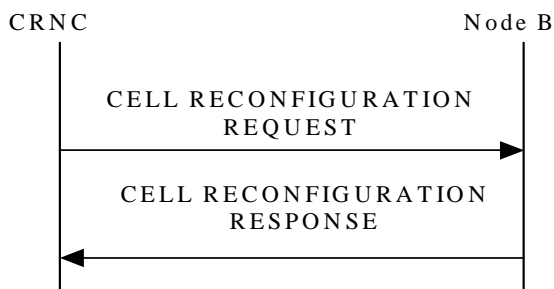


## 8.2.13 Cell Reconfiguration

### 8.2.13.1 General

This procedure is used to reconfigure a cell in the Node B.

### 8.2.13.2 Successful Operation



**Figure 18: Cell Reconfiguration procedure, Successful Operation**

The procedure is initiated with a CELL RECONFIGURATION REQUEST message sent from the CRNC to the Node B using the Node B Control Port. Upon Reception, the Node B shall reconfigure the cell according to the parameters given in the message.

[FDD - If the CELL RECONFIGURATION REQUEST message includes the *Primary SCH Information IE*, the Node B shall reconfigure the Primary SCH power in the cell according to *Primary SCH Power IE* value.]

[FDD - If the CELL RECONFIGURATION REQUEST message includes the *Secondary SCH Information IE*, the Node B shall reconfigure the Secondary SCH power in the cell according to the *Secondary SCH Power IE* value.]

[FDD - If the CELL RECONFIGURATION REQUEST message includes the *Primary CPICH Information IE*, the Node B shall reconfigure the Primary CPICH power in the cell according to the *Primary CPICH Power IE* value. The Node B shall adjust all the transmitted power levels relative to the Primary CPICH power according to the new value.]

[FDD - If the CELL RECONFIGURATION REQUEST message includes one or more *Secondary CPICH Information IE*, the Node B shall reconfigure the power for each Secondary CPICH in the cell according to their *Secondary CPICH Power IE* value.]

[3.84Mcps TDD - If the CELL RECONFIGURATION REQUEST message includes the *SCH Information IE*, the Node B shall reconfigure the SCH power in the cell according to the *SCH Power IE* value.]

[TDD - If the CELL RECONFIGURATION REQUEST message includes the *Timing Advance Applied IE*, the Node B shall apply the necessary functions for Timing Advance in that cell including reporting of the Rx Timing Deviation measurement, according to the *Timing Advance Applied IE* value.]

[FDD - If the CELL RECONFIGURATION REQUEST message includes the *Primary CCPCH Information IE*, the Node B shall reconfigure the BCH power in the cell according to the *BCH Power IE* value.]

[TDD - If the CELL RECONFIGURATION REQUEST message includes the *PCCPCH Information IE*, the Node B shall reconfigure the P-CCPCH power in the cell according to the *PCCPCH Power IE* value. The Node B shall adjust all the transmitted power levels relative to the Primary CPPCH power according to the new value.]

If the CELL RECONFIGURATION REQUEST message includes the *Maximum Transmission Power IE*, the value shall be stored in the Node B and at any instance of time the total maximum output power in the cell shall not be above this value.

[3.84Mcps TDD - If the CELL RECONFIGURATION REQUEST message includes the *Time Slot Configuration* IE, the Node B shall reconfigure switching-point structure in the cell according to the *Time Slot* IE value.]

[1.28Mcps TDD - If the CELL RECONFIGURATION REQUEST message includes the *Time Slot Configuration LCR* IE, the Node B shall reconfigure switching-point structure in the cell according to the *Time Slot LCR* IE value.]

[TDD - If the CELL RECONFIGURATION REQUEST message includes any of the *DPCH/PUSCH/PRACH Constant Value* IEs, the Node B shall ignore them]

[1.28Mcps TDD - If the CELL RECONFIGURATION REQUEST message includes the *DwPCH Information* IE, the Node B shall reconfigure the DwPCH power in the Cell according to the *DwPCH Power* IE]

[FDD - If the CELL RECONFIGURATION REQUEST message includes the *IPDL Parameter Information* IE with the *IPDL Indicator* IE set to the value "Active" the Node B shall apply the IPDL in that cell according to the latest received parameters defined by the *IPDL FDD Parameters* IE. If the *Burst Mode Parameters* IE is included in the *IPDL FDD Parameters* IE, the IPDL shall be operated in burst mode according to ref [10].]

[3.84Mcps TDD - If the CELL RECONFIGURATION REQUEST message includes the *IPDL Parameter Information* IE with the *IPDL Indicator* IE set to the value "Active", the Node B shall apply the IPDL in that cell according to the latest received parameters defined by the *IPDL TDD Parameters* IE. If the *Burst Mode Parameters* IE is included in the *IPDL TDD Parameters* IE, the IPDL shall be operated in burst mode according to ref [21].]

[1.28Mcps TDD - If the CELL RECONFIGURATION REQUEST message includes the *IPDL Parameter Information LCR* IE with the *IPDL Indicator* IE set to the value "Active", the Node B shall apply the IPDL in that cell according to the latest received parameters defined by the *IPDL TDD Parameters LCR* IE. If the *Burst Mode Parameters* IE is included in the *IPDL TDD Parameters LCR* IE, the IPDL shall be operated in burst mode according to ref [21].]

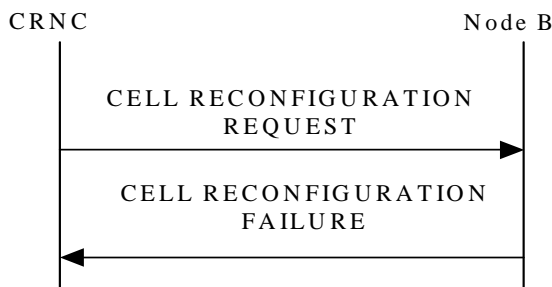
If the CELL RECONFIGURATION REQUEST message includes the *IPDL Parameter Information* IE with the *IPDL Indicator* IE set to the value "Inactive", the Node B shall deactivate the ongoing IPDL.

When the cell is successfully reconfigured, the Node B shall store the new *Configuration Generation ID* IE value and send a CELL RECONFIGURATION RESPONSE message as a response.

If the CELL RECONFIGURATION REQUEST message includes the *Synchronisation Configuration* IE, the Node B shall reconfigure the indicated parameters in the cell according to the value of the *N\_INSYNC\_IND*, *N\_OUTSYNC\_IND* and *T\_RLFAILURE* IEs. When the parameters in the *Synchronisation Configuration* IE affect the thresholds applied to a RL set, the Node B shall immediately apply the new thresholds. When applying the new thresholds, the Node B shall not change the state or value of any of the timers and counters for which the new thresholds apply.

[FDD – If the CELL RECONFIGURATION REQUEST message includes the *PDSCH Information* IE, the Node B shall, if supported, store the values included in the *Maximum PDSCH Power* IE and apply the indicated maximum power levels to the PDSCH. For spreading factors for which a maximum PDSCH power level was already configured and the CELL RECONFIGURATION REQUEST does not provide a new value for the concerning spreading factor, the Node B shall continue to use the existing value.]

### 8.2.13.3 Unsuccessful Operation



**Figure 19: Cell Reconfiguration procedure: Unsuccessful Operation**

If the Node B cannot reconfigure the cell according to the information given in CELL RECONFIGURATION REQUEST message, the CELL RECONFIGURATION FAILURE message shall be sent to the CRNC.

In this case, the Node B shall keep the old configuration of the cell and the Configuration Generation ID shall not be changed in the Node B.

The *Cause* IE shall be set to an appropriate value.

Typical cause values are as follows:

**Radio Network Layer Cause:**

- Power level not supported
- Node B Resources unavailable
- IPDL not supported

**Miscellaneous Cause:**

- O&M Intervention
- Control processing overload
- HW failure

### 8.2.13.4 Abnormal Conditions

If the *IPDL Indicator* IE set to the value "Active" is included in the CELL RECONFIGURATION REQUEST message and there is active IPDL ongoing in the Node B, the Node B shall respond with the CELL RECONFIGURATION FAILURE message with the cause value "IPDL already activated".

If the *IPDL Indicator* IE set to the value "Active" is included in the CELL RECONFIGURATION REQUEST message and there is no IPDL stored in the Node B defining the IPDL, the Node B shall respond with the CELL RECONFIGURATION FAILURE message with the cause value "IPDL parameters not available".

If the Local Cell on which the cell is mapped does not belong to of a Power Local Cell Group and the requested maximum transmission power indicated by the *Maximum Transmission Power* IE exceeds the Maximum DL Power Capability of the Local Cell, the Node B shall consider the procedure as having failed and send a CELL RECONFIGURATION FAILURE message to the CRNC.

If the Local Cell on which the cell is mapped belongs to a Power Local Cell Group and the requested maximum transmission power indicated by *Maximum Transmission Power* IE exceeds the Maximum DL Power Capability of the

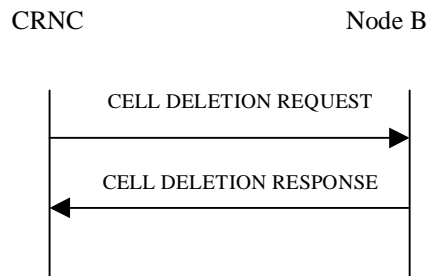
Power Local Cell Group, the Node B shall consider the procedure as having failed and send a CELL RECONFIGURATION FAILURE message to the CRNC.

## 8.2.14 Cell Deletion

### 8.2.14.1 General

This procedure is used to delete a cell in the Node B.

### 8.2.14.2 Successful Operation



**Figure 20: Cell Deletion procedure, Successful Operation**

The procedure is initiated with a CELL DELETION REQUEST message sent from the CRNC to the Node B using the Node B Control Port. Upon reception, the Node B shall remove the cell and any remaining common and dedicated channels within the cell. The states for the cell and the deleted common channels shall be set to Not Existing [6]. The Node B shall remove all Radio Links from the Cell and all Node B Communication Contexts that as a result do not have a Radio Link. The Node B shall also initiate release of the user plane transport bearers for the removed common and dedicated channels.

When the cell is deleted, the Node B shall send a CELL DELETION RESPONSE message as a response.

### 8.2.14.3 Unsuccessful Operation

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### 8.2.14.4 Abnormal Conditions

If the CELL DELETION REQUEST message includes a *C-ID* IE value that is not existing in the Node B, the Node B shall respond with the CELL DELETION RESPONSE message.

## 8.2.15 Resource Status Indication

### 8.2.15.1 General

This procedure is used in the following cases:

1. When a Local Cell becomes Existing at the Node B.
2. When a Local Cell is to be deleted in Node B, i.e. becomes Not Existing.
3. When the capabilities of the Local Cell change at the Node B.
4. When a cell has changed its capability and/or its resource operational state at the Node B.
5. When common physical channels and/or common transport channels have changed their capabilities at the Node B.
6. When a Communication Control Port has changed its resource operational state at the Node B.

7. When a Local Cell Group has changed its resource capability at the Node B.

Each of the above cases shall trigger a Resource Status Indication procedure and the RESOURCE STATUS INDICATION message shall contain the logical resources affected for that case and the cause value when applicable.

### 8.2.15.2 Successful Operation



**Figure 21: Resource Status Indication procedure, Successful Operation**

The procedure is initiated with a RESOURCE STATUS INDICATION message sent from the Node B to the CRNC using the Node B Control Port.

#### Local Cell Becomes Existing:

When a Local Cell becomes Existing at the Node B, the Node B shall make it available to the CRNC by sending a RESOURCE STATUS INDICATION message containing a "No Failure" Indication, the *Local Cell ID* IE and the *Add/Delete Indicator* IE set equal to "Add".

When the capacity credits and consumption laws are shared between several Local Cells, the Node B includes the *Local Cell Group ID* IE for the Local Cell. If the *Local Cell Group Information* IE has not already been reported in a previous RESOURCE STATUS INDICATION message, the Node B shall include the capacity credits and the consumption laws in the *Local Cell Group Information* IE.

If the *Local Cell* IE contains both the *DL Or Global Capacity Credit* IE and the *UL Capacity Credit* IE, then the internal resource capabilities of the Local Cell are modelled independently in the Uplink and Downlink direction. If the *UL Capacity Credit* IE is not present, then the internal resource capabilities of the Local Cell are modelled as shared resources between Uplink and Downlink. If the *Local Cell Group Information* IE contains both the *DL Or Global Capacity Credit* IE and the *UL Capacity Credit* IE, then the internal resource capabilities of the Local Cell Group are modelled independently in the Uplink and Downlink direction. If the *UL Capacity Credit* IE is not present, then the internal resource capabilities of the Local Cell Group are modelled as shared resources between Uplink and Downlink.

If the Node B internal power resources are pooled for a group of Local Cells, the Node B shall include the *Power Local Cell Group ID* IE for the Local Cell. If the *Power Local Cell Group Information* IE has not already been reported in a previous RESOURCE STATUS INDICATION message, the Node B shall include this IE for the concerned Power Local Cell Group in this message. Furthermore, the sum of the Maximum DL Power Capability of all the Local Cells belonging to the same Power Local Cell Group shall not exceed the Maximum DL Power Capability of the concerned Power Local Cell Group.

If the Local Cell is HSDPA-capable when it becomes Existing, the Node B shall include the *HSDPA Capability* IE set to "HSDPA Capable" for the Local Cell.

If the Local Cell is E-DCH-capable when it becomes Existing, the Node B shall include the *E-DCH Capability* IE set to "E-DCH Capable" for the Local Cell.

#### Local Cell Deletion:

When a Local Cell is to be deleted in the Node B, i.e. becomes Not Existing, the Node B shall withdraw the Local Cell from the CRNC by sending a RESOURCE STATUS INDICATION message containing a "No Failure" Indication, the *Local Cell ID* IE and the *Add/Delete Indicator* IE set to "Delete". The Node B shall not withdraw a previously configured cell at the Node B that the CRNC had configured using the Cell Setup procedure, until the CRNC has deleted that cell at the Node B using the Cell Delete procedure.

#### Capability Change of a Local Cell:

When the capabilities of a Local Cell change at the Node B, the Node B shall report the new capability by sending a RESOURCE STATUS INDICATION message containing a "Service Impacting" Indication and the *Local Cell ID* IE.

The Node B shall include the *Minimum DL Power Capability* IE when it is known by the Node B.

If the maximum DL power capability of the Local Cell has changed, the new capability shall be indicated in the *Maximum DL Power Capability* IE.

If the DL capability for supporting the minimum spreading factor has changed, the new capability shall be indicated in the *Minimum Spreading Factor* IE.

[TDD - If the availability of the Reference clock connected to a Local Cell has changed, the new availability condition shall be indicated in the *Reference Clock Availability* IE.]

The *Cause* IE in the RESOURCE STATUS INDICATION message shall be set to the appropriate value.

If the internal resource capabilities of the Local Cell are affected, it shall be reported in the following way:

- If the internal resource capabilities of the Local Cell are modelled as shared resources between Uplink and Downlink, the new capacity shall be reported in the *DL Or Global Capacity Credit* IE.
- If the internal resource capabilities of the Local Cell are modelled independently in the Uplink and Downlink direction, then the *DL Or Global Capacity Credit* IE and the *UL Capacity Credit* IE shall be present in the RESOURCE STATUS INDICATION.

If the Capacity Consumption Law for Common Channels has changed for the Local Cell, the new law shall be reported by the Node B in the *Common Channels Capacity Consumption Law* IE.

If the Capacity Consumption Law for Dedicated Channels has changed for the Local Cell, the new law shall be reported by the Node B in the *Dedicated Channels Capacity Consumption Law* IE.

If the HSDPA capability has changed for the Local Cell, the new capability shall be indicated in the *HSDPA Capability* IE.

[If the E-DCH capability has changed for the Local Cell, the new capability shall be indicated in the E-DCH Capability IE.](#)

#### **Capability Change of a Cell:**

When the capabilities and/or resource operational state of a cell changes at the Node B, the Node B shall report the new capability and/or resource operational state by sending a RESOURCE STATUS INDICATION message containing a "Service Impacting" Indication, the *Resource Operational State* IE and the *Availability Status* IE. The *Cause* IE in the RESOURCE STATUS INDICATION message shall be set to the appropriate value.

#### **Capability Change of a Common Physical Channel and/or Common Transport Channel:**

The Node B shall not delete any common or dedicated channels due to the cell being "Disabled". For all affected common and dedicated channels, the Node B shall report the impact to the CRNC with the relevant procedures.

When the capabilities and/or resource operational state of common physical channels and/or common transport channels have changed, the Node B shall report the new capability and/or resource operational state by sending a RESOURCE STATUS INDICATION message containing a "Service Impacting" Indication, the *Resource Operational State* IE and the *Availability Status* IE set to appropriate values for the affected channel(s). The *Cause* IE in the RESOURCE STATUS INDICATION message shall be set to the appropriate value.

When a power value for a common physical channel and/or a common transport channel becomes beyond the supported power value range due to a change in capability in the Node B, it shall be reported to the CRNC in the RESOURCE STATUS INDICATION message, with the *Resource Operational State* IE set to "Enabled", the *Availability Status* IE set to "Degraded" and the *Cause* IE set to "Power level not supported". Affected channels shall use the nearest power value that is supported.

#### **Capability Change of a Communication Control Port:**

When the resource operational state of a Communication Control Port has changed, the Node B shall report the new resource operational state by sending a RESOURCE STATUS INDICATION message containing a "Service Impacting" Indication and the *Communication Control Port ID* IE. The *Cause* IE in the RESOURCE STATUS INDICATION message shall be set to the appropriate value.

#### **Capability Change of HS-DSCH Resources:**

When the resource operational state of the HS-DSCH resources has changed, the Node B shall report the new resource operational state by sending a RESOURCE STATUS INDICATION message containing a "Service Impacting" Indication. The Cause IE in the RESOURCE STATUS INDICATION message shall be set to the appropriate value.

**Capability Change of a Local Cell Group:**

When the resource capabilities of a Local Cell Group change at the Node B, the Node B shall report the new capability by sending a RESOURCE STATUS INDICATION message containing a "Service Impacting" Indication and the *Local Cell Group Information* IE reporting the change. The Cause IE in the RESOURCE STATUS INDICATION message shall be set to an appropriate value. If the RESOURCE STATUS INDICATION message contains both the *DL Or Global Capacity Credit* IE and the *UL Capacity Credit* IE, then the internal resource capabilities of the Node B are modelled independently in the Uplink and Downlink direction. If the *UL Capacity Credit* IE is not present, then the internal resource capabilities of the Node B are modelled as shared resources between Uplink and Downlink.

If the Capacity Consumption Law for Common Channels has changed for the Local Cell Group, the new law shall be reported by the Node B in the *Common Channels Capacity Consumption Law* IE.

If the Capacity Consumption Law for Dedicated Channels has changed for the Local Cell Group, the new law shall be reported by the Node B in the *Dedicated Channels Capacity Consumption Law* IE.

**Capability Change of a Power Local Cell Group:**

When the power capability of a Power Local Cell Group changes at the Node B, the Node B shall report the new capability by sending a RESOURCE STATUS INDICATION message with the *Indication Type* IE set equal to "Service Impacting" and the *Power Local Cell Group Information* IE reporting the change. The Cause IE in the RESOURCE STATUS INDICATION message shall be set to an appropriate value. In this case, the Node B shall also include the *Maximum DL Power Capability* IE in the *Local Cell Information* IE for all the Local Cells belonging to the concerned Power Local Cell Group. Furthermore, the sum of the Maximum DL Power Capability of all the Local Cells belonging to the same Power Local Cell Group shall not exceed the Maximum DL Power Capability of the concerned Power Local Cell Group.

**General:**

When the RESOURCE STATUS INDICATION message is used to report an error, only one cause value for all reported objects can be sent in one message. When the RESOURCE STATUS INDICATION message is used to clear errors, only all errors for one object can be cleared per message. It is not possible to clear one out of several errors for one object.

8.2.15.3 Abnormal Conditions

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8.2.16 System Information Update

8.2.16.1 General

The System Information Update procedure performs the necessary operations in order for the Node B to apply the correct scheduling of and/or to include the appropriate contents to the system information segments broadcast on the BCCH.

8.2.16.2 Successful Operation

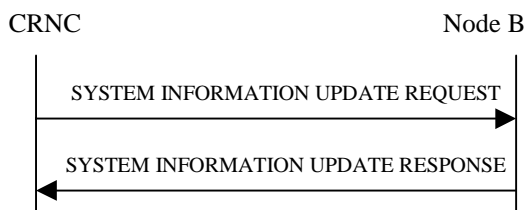


Figure 22: System Information Update procedure, Successful Operation

The procedure is initiated with a SYSTEM INFORMATION UPDATE REQUEST message sent from the CRNC to the Node B using the Node B Control Port.

The Node B shall consider the requested updates to the BCCH schedule in the same order as the MIB/SB/SIB information is included in the SYSTEM INFORMATION UPDATE REQUEST message.

If the SYSTEM INFORMATION UPDATE REQUEST message includes the *BCCH Modification Time* IE, the updates to the BCCH schedule (possibly consisting of IB occurrence additions, IB occurrence deletions and IB occurrence contents updates) indicated in the SYSTEM INFORMATION UPDATE REQUEST message shall be applied by the Node B at the first time instance starting from the SFN value set by the *BCCH Modification Time* IE. If no *BCCH Modification Time* IE is included, the updates to the BCCH schedule shall be applied as soon as possible.

**Information Block addition:**

If the SYSTEM INFORMATION UPDATE REQUEST message includes segments of a certain MIB/SB/SIB, the Node B shall assume that all segments for that Information Block are included in the message and ordered with increasing Segment Index (starting from 0). For each included segment, segment type information and *IB SG POS* IE are also given in the SYSTEM INFORMATION UPDATE REQUEST message.

The Node B shall determine the correct cell system frame number(s) (SFN) for transmission of the segments of system information, from the scheduling parameters provided in the SYSTEM INFORMATION UPDATE REQUEST message. The SFN for transmitting the segments shall be determined by the *IB SG REP* IE and *IB SG POS* IE such that:

$$- \text{SFN mod IB\_SG\_REP} = \text{IB\_SG\_POS}$$

If the SYSTEM INFORMATION UPDATE REQUEST message contains Master Information Block (MIB) segments in addition to SIB or SB segments, the MIB segments shall first be sent in the physical channel by the Node B. Once these MIB segments have been sent in the physical channel, the updated SB/SIB segments shall then be sent in the physical channel.

Only if the inclusion of each new IB segment in the BCCH schedule leads to a valid segment combination according to [18], the Node B shall accept the system information update.

If the *SIB Originator* IE value is set to "Node B", the Node B shall create the SIB segment of the SIB type given by the *IB Type* IE and autonomously update the SIB segment and apply the scheduling and repetition as given by the *IB SG REP* IE and *IB SG POS* IE.

SIBs originating from the Node B can only be SIBs containing information that the Node B can obtain on its own.

**Information Block deletion:**

If an IB Deletion is indicated in an instance of *MIB/SB/SIB information* IE in the SYSTEM INFORMATION UPDATE REQUEST message, the Node B shall delete the IB indicated by the *IB Type* IE and *IB OC ID* IE from the transmission schedule on BCCH.

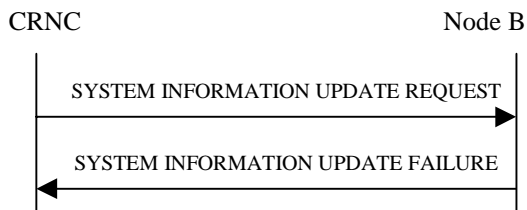
**Information Block update:**

If the SYSTEM INFORMATION UPDATE REQUEST message contains segments for an IB without *IB SG REP* IE and *IB SG POS* IE and there is already an IB in the BCCH schedule with the same IB Type and IB OC ID which is not requested to be deleted from the BCCH schedule by an IB deletion indicated in a *MIB/SB/SIB information* IE repetition present in the SYSTEM INFORMATION UPDATE REQUEST message before the IB segments are included, then the Node B shall only update the contents of the IB segments without any modification in segment scheduling.

If the Node B successfully completes the updating of the physical channel scheduling cycle according to the parameters given in the SYSTEM INFORMATION UPDATE REQUEST message, it shall respond to the CRNC with a SYSTEM INFORMATION UPDATE RESPONSE message.



### 8.2.16.3 Unsuccessful Operation



**Figure 23: System Information Update procedure, Unsuccessful Operation**

If the Node B is unable to update the physical channel scheduling cycle according to all the parameters given in the SYSTEM INFORMATION UPDATE REQUEST message, it shall respond with a SYSTEM INFORMATION UPDATE FAILURE message with an appropriate cause value.

The Node B shall not incorporate any of the requested changes into the physical channel scheduling cycle, and the previous system information configuration shall remain intact.

Typical cause values are:

**Radio Network Layer Cause:**

- SIB Origination in Node B not Supported

**Miscellaneous Cause:**

- Hardware failure
- Control Processing overload
- O&M Intervention

### 8.2.16.4 Abnormal Conditions

The Node B shall reject, with the cause value "SIB origination in Node B not supported", requests for Node B originated system information blocks that make use of a value tag.

The Node B shall reject the requested update with cause value "BCCH scheduling error" if:

- After having handled a certain *MIB/SB/SIB information* IE repetition, an illegal BCCH schedule results;
- If a *MIB/SB/SIB Information* IE repetition includes an *IB SG REP* IE or an *IB SG POS* IE and there is already an IB in the BCCH schedule with the same IB Type and IB OC ID which is not requested to be deleted from the BCCH schedule by an IB deletion indicated in a *MIB/SB/SIB information* IE repetition present in the SYSTEM INFORMATION UPDATE REQUEST message before the IB addition is indicated. This rule shall apply even if the scheduling instructions in *IB SG REP* IE and *IB SG POS* IE were the same as the current scheduling instructions for the concerned IB;
- If a *MIB/SB/SIB Information* IE repetition includes no *IB SG REP* IE and *IB SG POS* IE and there is no IB in the BCCH schedule with the same IB Type and IB OC ID;
- If a *MIB/SB/SIB Information* IE repetition includes no *IB SG REP* IE and *IB SG POS* IE and there is already an IB in the BCCH schedule with the same IB Type and IB OC ID but it is requested to be deleted from the BCCH schedule by an IB deletion indicated in a *MIB/SB/SIB information* IE repetition present in the SYSTEM INFORMATION UPDATE REQUEST message before the IB addition is indicated.

## 8.2.17 Radio Link Setup

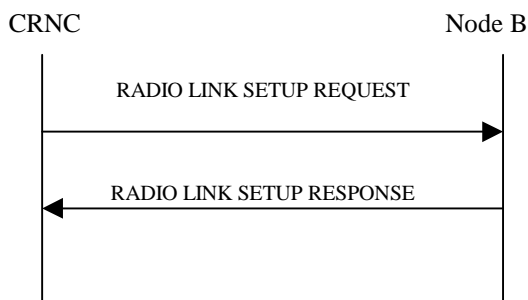
### 8.2.17.1 General

This procedure is used for establishing the necessary resources for a new Node B Communication Context in the Node B.

[FDD - The Radio Link Setup procedure is used to establish one or more radio links. The procedure establishes one or more DCHs on all radio links, and in addition, it can include the establishment of one or more DSCHs or an HS-DSCH on one radio link.]

[TDD - The Radio Link Setup procedure is used to establish one radio link including one or more transport channels. The transport channels can be a mix of DCHs, DSCHs, and USCHs, or DCHs and an HS-DSCH, including also combinations where one or more transport channel types are not present.]

### 8.2.17.2 Successful Operation



**Figure 24: Radio Link Setup procedure, Successful Operation**

The procedure is initiated with a RADIO LINK SETUP REQUEST message sent from the CRNC to the Node B using the Node B Control Port.

Upon reception of the RADIO LINK SETUP REQUEST message, the Node B shall reserve necessary resources and configure the new Radio Link(s) according to the parameters given in the message.

The Node B shall prioritise resource allocation for the RL(s) to be established according to Annex A.

#### Transport Channels Handling:

##### DCH(s):

[TDD - If the *DCH Information* IE is present, the Node B shall configure the new DCH(s) according to the parameters given in the message.]

If the RADIO LINK SETUP REQUEST message includes a *DCH Information* IE with multiple *DCH Specific Info* IEs, then the Node B shall treat the DCHs in the *DCH Information* IE as a set of co-ordinated DCHs. The Node B shall include these DCHs in the new configuration only if it can include all of them in the new configuration.

If the *DCH Specific Info* IE includes the *Unidirectional DCH Indicator* IE set to "Uplink DCH only", the Node B shall ignore the *Transport Format Set* IE for the downlink for this DCH. As a consequence this DCH is not included as a part of the downlink CCTrCH.

[TDD - If the *DCH Specific Info* IE includes the *Unidirectional DCH Indicator* IE set to "Downlink DCH only", the Node B shall ignore the *Transport Format Set* IE for the uplink for this DCH. As a consequence this DCH is not included as a part of the uplink CCTrCH.]

[FDD - For DCHs which do not belong to a set of co-ordinated DCHs with the *QE-Selector* IE set to "selected", the Transport channel BER from that DCH shall be the base for the QE in the UL data frames. If no Transport channel BER is available for the selected DCH, the Physical channel BER shall be used for the QE, ref. [16]. If the *QE-Selector* IE is set to "non-selected", the Physical channel BER shall be used for the QE in the UL data frames, ref. [16].]

For a set of co-ordinated DCHs, the Transport channel BER from the DCH with the *QE-Selector* IE set to "selected" shall be used for the QE in the UL data frames, ref. [16]. [FDD - If no Transport channel BER is available for the selected DCH, the Physical channel BER shall be used for the QE, ref. [16]. If all DCHs have *QE-Selector* IE set to "non-selected", the Physical channel BER shall be used for the QE, ref. [16].]

The Node B shall use the included *UL FP Mode* IE for a DCH or a set of co-ordinated DCHs as the FP Mode in the Uplink of the user plane for the DCH or the set of co-ordinated DCHs in the configuration.

The Node B shall use the included *ToAWS* IE for a DCH or a set of co-ordinated DCHs as the Time of Arrival Window Startpoint in the user plane for the DCH or the set of co-ordinated DCHs in the configuration.

The Node B shall use the included *ToAWE* IE for a DCH or a set of co-ordinated DCHs as the Time of Arrival Window Endpoint in the user plane for the DCH or the set of co-ordinated DCHs in the configuration.

The received *Frame Handling Priority* IE specified for each Transport Channel should be used when prioritising between different frames in the downlink on the radio interface in congestion situations within the Node B once the new RL(s) has been activated.

If the *TNL QoS* IE is included for a DCH or a set of co-ordinated DCHs and if ALCAP is not used, the *TNL QoS* IE may be used by the Node B to determine the transport bearer characteristics to apply in the uplink between the Node B and the CRNC for the related DCH or set of co-ordinated DCHs.

[FDD - The *Diversity Control Field* IE indicates for each RL (except the first RL in the message) whether the Node B shall combine the concerned RL or not.

- If the *Diversity Control Field* IE is set to "May", the Node B shall decide for either of the alternatives.
- If the *Diversity Control Field* IE is set to "Must", the Node B shall combine the RL with one of the other RL.
- If the *Diversity Control Field* IE is set to "Must not", the Node B shall not combine the RL with any other existing RL.

~~Diversity combining~~ The *Diversity Control Field* IE is applied to Dedicated Transport Channels (DCH) only, i.e. it is not applied to the DSCHs in case of E-DCH is shall always be assumed to be set to "Must". When a new RL is to be combined, the Node B shall choose which RL(s) to combine it with.]

[FDD - In the RADIO LINK SETUP RESPONSE message, the Node B shall indicate for each RL with the Diversity Indication in the *RL Information Response* IE whether the RL is combined or not.]

- [FDD - In case of not combining with a RL previously listed in the RADIO LINK SETUP RESPONSE message or for the first RL in the RADIO LINK SETUP RESPONSE message, the Node B shall include in the *DCH Information Response* IE in the RADIO LINK SETUP RESPONSE message the *Binding ID* IE and *Transport Layer Address* IE for the transport bearer to be established for each DCH of this RL.]
- [FDD - Otherwise in case of combining, the *RL ID* IE indicates (one of) the RL(s) previously listed in this RADIO LINK SETUP RESPONSE message with which the concerned RL is combined.]

[TDD - The Node B shall include in the *DCH Information Response* IE in the RADIO LINK SETUP RESPONSE message the *Binding ID* IE and *Transport Layer Address* IE for the transport bearer to be established for each DCH of this RL.]

In the case of a set of co-ordinated DCHs, the *Binding ID* IE and the *Transport Layer Address* IE shall be specified for only one of the DCHs in the set of co-ordinated DCHs.

#### **DSCH(s):**

If the *DSCH Information* IE is present, the Node B shall configure the new DSCH(s) according to the parameters given in the message.

[FDD - If the RADIO LINK SETUP REQUEST message includes the *TFCI2 Bearer Information* IE then the Node B shall support the establishment of a transport bearer on which the DSCH TFCI Signaling control frames shall be received. The Node B shall manage the time of arrival of these frames according to the values of ToAWS and ToAWE specified in the IEs. The *TFCI2 Bearer Information Response* IE containing the *Binding ID* IE and the *Transport Layer Address* IE for the new bearer to be set up for this purpose shall be returned in the RADIO LINK SETUP RESPONSE message. If the RADIO LINK SETUP REQUEST message includes the *Transport Layer Address* IE and *Binding ID* IE in the *TFCI2 Bearer Information* IE the

Node B may use the transport layer address and the binding identifier received from the CRNC when establishing a TFCI2 transport bearer.]

If the RADIO LINK SETUP REQUEST message includes the *Transport Layer Address* IE and *Binding ID* IE in the *DSCH Information* IE, the Node B may use the transport layer address and the binding identifier received from the CRNC when establishing a transport bearer for the DSCH.

The Node B shall include in the *DSCH Information Response* IE in the RADIO LINK SETUP RESPONSE the *Binding ID* IE and the *Transport Layer Address* IE for the transport bearer to be established for each DSCH of this RL.

#### [TDD - USCH(s)]:

[TDD - If the *USCH Information* IE is present, the Node B shall configure the new USCH(s) according to the parameters given in the message.]

[TDD - If the RADIO LINK SETUP REQUEST message includes the *Transport Layer Address* IE and *Binding ID* IE in the *USCH Information* IE, the Node B may use the transport layer address and the binding identifier received from the CRNC when establishing a transport bearer for the USCH.]

[TDD - If the RADIO LINK SETUP REQUEST message includes the *TNL QoS* IE in the *USCH Information* IE and if ALCAP is not used, the Node B may use the *TNL QoS* IE to determine the transport bearer characteristics to apply in the uplink for the related USCH.]

[TDD -If the *USCH Information* IE is present, the Node B shall include in the *USCH Information Response* IE in the RADIO LINK SETUP RESPONSE message the *Binding ID* IE and the *Transport Layer Address* IE for the transport bearer to be established for each USCH of this RL.]

#### HS-DSCH:

If the *HS-DSCH Information* IE is present in the RADIO LINK SETUP REQUEST message, then:

- The Node B shall setup the requested HS-PDSCH resources on the Serving HS-DSCH Radio Link indicated by the *HS-PDSCH RL ID* IE.
- The Node B shall include the *HARQ Memory Partitioning* IE in the [FDD – *HS-DSCH FDD Information Response* IE] [TDD – *HS-DSCH TDD Information Response* IE] in the RADIO LINK SETUP RESPONSE message.
- The Node B shall include in the RADIO LINK SETUP RESPONSE message the *Binding ID* IE and *Transport Layer Address* IE for establishment of transport bearer for every HS-DSCH MAC-d flow being established.
- If the RADIO LINK SETUP REQUEST message includes the *Transport Layer Address* IE and *Binding ID* IE in the *HS-DSCH Information* IE for an HS-DSCH MAC-d flow, then the Node B may use the transport layer address and the binding identifier received from the CRNC when establishing a transport bearer for the concerned HS-DSCH MAC-d flow.
- If the RADIO LINK SETUP REQUEST message includes the *MAC-hs Guaranteed Bit Rate* IE for a Priority Queue in the *HS-DSCH MAC-d Flows Information* IE in the *HS-DSCH Information* IE, then the Node B shall use this information to optimise MAC-hs scheduling decisions for the related HSDPA Priority Queue.
- If the RADIO LINK SETUP REQUEST message includes the *Discard Timer* IE for a Priority Queue in the *HS-DSCH MAC-d Flows Information* IE in the *HS-DSCH Information* IE, then the Node B shall use this information to discard out-of-date MAC-hs SDUs from the related HSDPA Priority Queue.
- The Node B shall include the *HS-DSCH Initial Capacity Allocation* IE in the [FDD – *HS-DSCH FDD Information Response* IE] [TDD – *HS-DSCH TDD Information Response* IE] in the RADIO LINK SETUP RESPONSE message for every HS-DSCH MAC-d flow being established, if the Node B allows the CRNC to start transmission of MAC-d PDUs before the Node B has allocated capacity on user plane as described in [24].

- [FDD – If the RADIO LINK SETUP REQUEST message includes the *HS-SCCH Power Offset* IE in the *HS-DSCH Information* IE, then the Node B may use this value to determine the HS-SCCH power. The HS-SCCH Power Offset should be applied for any HS-SCCH transmission to this UE.]
- [FDD – If the RADIO LINK SETUP REQUEST message includes the *Measurement Power Offset* IE in the *HS-DSCH Information* IE, then the Node B shall use the measurement power offset as described in ref [10], subclause 6A.2.]
- [FDD – The Node B shall allocate HS-SCCH codes corresponding to the HS-DSCH and include the *HS-SCCH Specific Information Response* IE in the *HS-DSCH FDD Information Response* IE in the RADIO LINK SETUP RESPONSE message.]
- [TDD – The Node B shall allocate HS-SCCH parameters corresponding to the HS-DSCH and include the [3.84Mcps TDD - *HS-SCCH Specific Information Response* IE] [1.28Mcps TDD - *HS-SCCH Specific Information Response LCR* IE] in the *HS-DSCH TDD Information Response* IE in the RADIO LINK SETUP RESPONSE message.]

### **FDD - E-DCH:**

If the *E-DCH FDD Information* IE is present in the RADIO LINK SETUP REQUEST message:

- The Node B shall setup the requested E-DCH resources on the Radio Links indicated by the *E-DCH RL Indication* IE in the *RL Information* IE.
- The Node B shall include in the RADIO LINK SETUP RESPONSE message the *Binding ID* IE and *Transport Layer Address* IE for establishment of transport bearer for every E-DCH MAC-d flow being established.
- If the RADIO LINK SETUP REQUEST message includes the *Transport Layer Address* IE and *Binding ID* IE in the *E-DCH Information* IE for an E-DCH MAC-d flow, then the Node B may use the transport layer address and the binding identifier received from the CRNC when establishing a transport bearer for the concerned E-DCH MAC-d flow.
- If the RADIO LINK SETUP REQUEST message includes the *MAC-es Guaranteed Bit Rate* IE in the *Data Descriptor Indicator* IE in the *E-DCH Information* IE, then the Node B shall use this information to optimise MAC-e scheduling decisions for the related reordering queue.
- If the RADIO LINK SETUP REQUEST message includes the *Maximum Number Of Transmissions For E-DCH* IE in the *E-DCH FDD Information* IE, then the Node B shall use this information to report if the maximum number of transmissions has elapsed.
- If the *TNL QoS* IE is included for an E-DCH MAC-d flow and if ALCAP is not used, the *TNL QoS* IE may be used by the Node B to determine the transport bearer characteristics to apply in the uplink for the related MAC-d flow.
- The Node B shall include the *E-AGCH And E-RGCH/E-HICH FDD Scrambling Code* IE, the *E-RGCH/E-HICH Channelisation Code* IE and the corresponding *Sequence Number* IEs in the *E-DCH FDD DL Control Channel Information* IE in the RADIO LINK SETUP RESPONSE message for every RL indicated by the *E-DCH RL Indication* IE in the *RL Information* IE.
- If the RADIO LINK SETUP message includes the *Serving E-DCH RL* IE indicating that the Serving E-DCH RL is in this Node B, then the Node B shall allocate an E-RNTI identifier for the corresponding RL and include this E-RNTI identifier and the channelisation code of the corresponding E-AGCH in the *E-DCH FDD DL Control Channel Information* IE in the RADIO LINK SETUP RESPONSE message.]

### **Physical Channels Handling:**

#### **[FDD - Compressed Mode]:**

[FDD - If the RADIO LINK SETUP REQUEST message includes the *Transmission Gap Pattern Sequence Information* IE, the Node B shall store the information about the Transmission Gap Pattern Sequences to be used in the Compressed Mode Configuration. This Compressed Mode Configuration shall be valid in the

Node B until the next Compressed Mode Configuration is configured in the Node B or the Node B Communication Context is deleted.]

[FDD - If the *Downlink Compressed Mode Method* IE in one or more Transmission Gap Pattern Sequence is set to "SF/2" in the RADIO LINK SETUP REQUEST message, the Node B shall use or not the alternate scrambling code as indicated for each DL Channelisation Code in the *Transmission Gap Pattern Sequence Code Information* IE.]

[FDD - If the RADIO LINK SETUP REQUEST message includes the *Transmission Gap Pattern Sequence Information* IE and the *Active Pattern Sequence Information* IE, the Node B shall use the information to activate the indicated Transmission Gap Pattern Sequence(s) in the new RL. The received *CM Configuration Change CFN* refers to the latest passed CFN with that value. The Node B shall treat the received *TGCFN* IEs as follows:]

- [FDD - If any received *TGCFN* IE has the same value as the received *CM Configuration Change CFN* IE, the Node B shall consider the concerned Transmission Gap Pattern Sequence as activated at that CFN.]
- [FDD - If any received *TGCFN* IE does not have the same value as the received *CM Configuration Change CFN* IE but the first CFN after the *CM Configuration Change CFN* with a value equal to the *TGCFN* IE has already passed, the Node B shall consider the concerned Transmission Gap Pattern Sequence as activated at that CFN.]
- [FDD - For all other Transmission Gap Pattern Sequences included in the *Active Pattern Sequence Information* IE, the Node B shall activate each Transmission Gap Pattern Sequence at the first CFN after the *CM Configuration Change CFN* with a value equal to the *TGCFN* IE for the Transmission Gap Pattern Sequence.]

#### [FDD - DL Code Information]:

[FDD - When more than one DL DPDCH is assigned per RL, the segmented physical channel shall be mapped on to DL DPDCHs according to [8]. When  $p$  number of DL DPDCHs are assigned to each RL, the first pair of DL Scrambling Code and FDD DL Channelisation Code Number corresponds to "*PhCH number 1*", the second to "*PhCH number 2*", and so on until the  $p$ th to "*PhCH number p*".]

#### [TDD - PDSCH RL ID]:

[TDD - If the *PDSCH RL ID* IE is included in RADIO LINK SETUP REQUEST message, the Node B shall use the PDSCH RL ID as an identifier for the PDSCH and/or PUSCH in this radio link.]

#### [FDD – Phase Reference Handling]:

[FDD – If the RADIO LINK SETUP REQUEST message includes the *Primary CPICH Usage For Channel Estimation* IE and has the value "Primary CPICH shall not be used", the Node B shall assume that the UE is not using the Primary CPICH for channel estimation. If the RADIO LINK SETUP REQUEST message does not include the *Primary CPICH Usage For Channel Estimation* IE or includes the *Primary CPICH Usage For Channel Estimation* IE and has the value "Primary CPICH may be used", the Node B shall assume that the UE may use the Primary CPICH for channel estimation.]

[FDD – If the RADIO LINK SETUP REQUEST message includes the *Secondary CPICH Information* IE, the Node B shall assume that the UE may use the Secondary CPICH indicated by the *Common Physical Channel ID* IE for channel estimation.]

#### General:

[FDD - If the *Propagation Delay* IE is included, the Node B may use this information to speed up the detection of L1 synchronisation.]

[FDD - The *UL SIR Target* IE included in the message shall be used by the Node B as initial UL SIR target for the UL inner loop power control.]

[1.28Mcps TDD - The *UL SIR Target* IE included in the message shall be used by the Node B as initial UL SIR target for the UL inner loop power control according [19] and [21].]

[FDD - If the received *Limited Power Increase* IE is set to "Used", the Node B shall, if supported, use Limited Power Increase according to ref. [10] subclause 5.2.1 for the inner loop DL power control.]

[FDD - If the *TFCI Signalling Mode* IE within the RADIO LINK SETUP REQUEST message indicates that there shall be a hard split on the TFCI field but the *TFCI2 Bearer Information* IE is not included in the message, then the Node B shall transmit the TFCI2 field with zero power.]

[FDD - If the *TFCI Signalling Mode* IE within the RADIO LINK SETUP REQUEST message indicates that there shall be a hard split on the TFCI and the *TFCI2 Bearer Information* IE is included in the message, then the Node B shall transmit the TFCI2 field with zero power until Synchronization is achieved on the TFCI2 transport bearer and the first valid DSCH TFCI Signalling control frame is received on this bearer (see ref. [24]).]

[FDD - If the RADIO LINK SETUP REQUEST message includes the *Length Of TFCI2* IE, then the Node B shall apply the length of TFCI (field 2) indicated in the message.]

[FDD - If the RADIO LINK SETUP REQUEST message does not include the *Length Of TFCI2* IE and the *Split Type* IE is present with the value "Hard", then the Node B shall assume the length of the TFCI (field 2) is 5 bits.]

[1.28Mcps TDD - If the *UL CCTrCH Information* IE includes the *TDD TPC UL Step Size* IE, the Node B shall configure the uplink TPC step size according to the parameters given in the message.]

#### **FDD - E-DPCH Handling:**

If the *UL DPDCH Indicator For E-DCH Operation* IE is set to "UL DPDCH not present", the *Min UL Channelisation Code Length* IE, the *Puncture Limit* IE and the *TFCS* IE, within the *UL DPCH Information* IE shall be ignored.

#### **Radio Link Handling:**

##### **[FDD - Transmit Diversity]:**

[FDD - When the *Diversity Mode* IE is set to "STTD", "Closedloop mode1" or "Closedloop mode2", the Node B shall activate/deactivate the Transmit Diversity for each Radio Link in accordance with the *Transmit Diversity Indication* IE]

##### **DL Power Control:**

[FDD - The Node B shall start any DL transmission using the initial DL power specified in the message on each DL DPCH of the RL until either UL synchronisation on the Uu interface is achieved for the RLS or Power Balancing is activated. No inner loop power control or balancing shall be performed during this period. The DL power shall then vary according to the inner loop power control (see ref.[10], subclause 5.2.1.2) and the power control procedure (see subclause 8.3.7), but shall always be kept within the maximum and minimum limit specified in the RADIO LINK SETUP REQUEST message. During compressed mode, the  $\delta P_{curr}$ , as described in ref.[10] subclause 5.2.1.3, shall be added to the maximum DL power for the associated compressed frame.]

[FDD - If the *DPC Mode* IE is present in the RADIO LINK SETUP REQUEST message, the Node B shall apply the DPC mode indicated in the message and be prepared that the DPC mode may be changed during the lifetime of the RL. If the *DPC Mode* IE is not present in the RADIO LINK SETUP REQUEST message, DPC mode 0 shall be applied (see ref. [10]).]

[3.84 Mcps TDD - The Node B shall determine the initial CCTrCH DL power for each DCH type CCTrCH by the following rule: If the *CCTrCH Initial DL Transmission Power* IE is included for that CCTrCH, then the Node B shall use that power for the initial CCTrCH DL power, otherwise the initial CCTrCH DL power is the *Initial DL Transmission Power* IE included in the *RL Information* IE. The Node B shall start any DL transmission on each DCH type CCTrCH using the initial CCTrCH DL power, as determined above, on each DL DPCH and on each Time Slot of the CCTrCH until the UL synchronisation on the Uu interface is achieved for the CCTrCH. No inner loop power control shall be performed during this period. The DL power shall then vary according to the inner loop power control (see ref.[21], subclause 4.2.3.4), but shall always be kept within the maximum and minimum limit specified in the RADIO LINK SETUP REQUEST message.]

[3.84 Mcps TDD - The Node B shall determine the maximum DL power for each DCH type CCTrCH by the following rule: If the *CCTrCH Maximum DL Transmission Power* IE is included for that CCTrCH, then the

Node B shall use that power for the maximum DL power, otherwise the maximum DL power is the *Maximum DL Power IE* included in the *RL Information IE*.]

[3.84 Mcps TDD - The Node B shall determine the minimum DL power for each DCH type CCTrCH by the following rule: If the *CCTrCH Minimum DL Transmission Power IE* is included for that CCTrCH, then the Node B shall use that power for the minimum DL power, otherwise the minimum DL power is the *Minimum DL Power IE* included in the *RL Information IE*.]

[3.84 Mcps TDD - The initial power, maximum power, and minimum power for DSCH type CCTrCH shall be determined as follows:

- If the DSCH type CCTrCH is paired with an uplink CCTrCH(s) for inner loop power control, the minimum, maximum and initial power for each PDSCH is determined in the same way as described above for DCH type CCTrCHs.
- If the DSCH type CCTrCH is not paired with an uplink CCTrCH(s) for inner loop power control, the PDSCH transmission power is DSCH Data Frame Protocol signalled [24], with the maximum value determined in the same way as described above for DCH type CCTrCHs. The minimum and initial powers, however, are subject to control by the CRNC via the frame protocol].

[1.28 Mcps TDD - The Node B shall determine the initial DL power for each timeslot within the DCH type CCTrCH by the following rule: If the *Initial DL Transmission Power IE* is included in the *DL Timeslot Information LCR IE*, then the Node B shall use that power for the Initial DL Power and ignore the *DL Time Slot ISCP info LCR IE*, otherwise the initial DL Power is the *Initial DL Transmission Power IE* included in the *RL Information IE* and if *DL Time Slot ISCP info LCR IE* is present, the Node B shall use the indicated value when deciding the initial DL TX Power for each timeslot as specified in [21], it shall reduce the DL TX power in those downlink timeslots of the radio link where the interference is low, and increase the DL TX power in those timeslots where the interference is high, while keeping the total downlink power in the radio link unchanged. The Node B shall start any DL transmission on each timeslot within each DCH type CCTrCH using the initial DL power, as determined above, on each DL DPCH and on each timeslot of the CCTrCH until the UL synchronisation on the Uu interface is achieved for the CCTrCH. No inner loop power control shall be performed during this period. The DL power shall then vary according to the inner loop power control (see ref.[21], subclause 5.1.2.4), but shall always be kept within the maximum and minimum limit specified in the RADIO LINK SETUP REQUEST message.]

[1.28 Mcps TDD - The Node B shall determine the maximum DL power for each timeslot within the DCH type CCTrCH by the following rule: If the *Maximum DL Power IE* is included in the *DL Timeslot Information LCR IE*, then the Node B shall use that power for the maximum DL power, otherwise the maximum DL power is the *Maximum DL Power IE* included in the *RL Information IE*.]

[1.28 Mcps TDD - The Node B shall determine the minimum DL power for each timeslot within the DCH type CCTrCH by the following rule: If the *Minimum DL Power IE* is included in the *DL Timeslot Information LCR IE*, then the Node B shall use that power for the minimum DL power, otherwise the minimum DL power is the *Minimum DL Power IE* included in the *RL Information IE*.]

[1.28 Mcps TDD - The Node B shall determine the initial power for each timeslot within the DSCH type CCTrCH by the following rule: If both the *CCTrCH Initial DL Transmission Power IE*, included in the *DL CCTrCH Information IE*, and the *DL Time Slot ISCP Info LCR IE*, included in the *RL Information IE*, are included then the Node B shall use that power for the PDSCH and ignore the *Initial DL Transmission Power IE* included in the *RL Information IE*, otherwise the initial DL Power is the *Initial DL Transmission Power IE* included in the *RL Information IE* and if *DL Time Slot ISCP info LCR IE* is present, the Node B shall use the indicated value when deciding the initial DL TX Power for each timeslot as specified in [21], it shall reduce the DL TX power in those downlink timeslots of the radio link where the interference is low, and increase the DL TX power in those timeslots where the interference is high, while keeping the total downlink power in the radio link unchanged. The Node B shall start any DL transmission on each timeslot within each DSCH type CCTrCH using the initial DL power, as determined above, on each DL PDSCH and on each timeslot of the CCTrCH until the UL synchronisation on the Uu interface is achieved for the CCTrCH. No inner loop power control shall be performed during this period. The DL power shall then vary according to the inner loop power control (see ref.[21], subclause 5.1.2.4), but shall always be kept within the maximum and minimum limit specified in the RADIO LINK SETUP REQUEST message.]

[1.28 Mcps TDD - The Node B shall determine the maximum DL power for each timeslot within the DSCH type CCTrCH by the following rule: If the *CCTrCH Maximum DL Transmission Power IE*, included in the



*DL CCTrCH Information* IE, is included then the Node B shall use that power for the maximum DL power, otherwise the maximum DL power is the *Maximum DL Power* IE included in the *RL Information* IE.]

[1.28 Mcps TDD - The Node B shall determine the minimum DL power for each timeslot within the DSCH type CCTrCH by the following rule: If the *CCTrCH Minimum DL Transmission Power* IE, included in the *DL CCTrCH Information* IE, is included then the Node B shall use that power for the minimum DL power, otherwise the minimum DL power is the *Minimum DL Power* IE included in the *RL Information* IE.]

[3.84Mcps TDD - If the *DL Time Slot ISCP Info* IE is present, the Node B shall use the indicated value when deciding the initial DL TX Power for each timeslot as specified in [21], i.e. it shall reduce the DL TX power in those downlink timeslots of the radio link where the interference is low, and increase the DL TX power in those timeslots where the interference is high, while keeping the total downlink power in the radio link unchanged].

[FDD - If the received *Inner Loop DL PC Status* IE is set to "Active", the Node B shall activate the inner loop DL power control for all RLs. If *Inner Loop DL PC Status* IE is set to "Inactive", the Node B shall deactivate the inner loop DL power control for all RLs according to ref. [10].]

[FDD - If the RADIO LINK SETUP REQUEST message includes the *DL Power Balancing Information* IE and the *Power Adjustment Type* IE is set to "Common" or "Individual", the Node B shall activate the power balancing, if activation of power balancing by the RADIO LINK SETUP REQUEST message is supported, according to subclause 8.3.7, using the *DL Power Balancing Information* IE. If the Node B starts the DL transmission and the activation of the power balancing at the same CFN, the initial power of the power balancing, i.e.  $P_{init}$  shall be set to the power level indicated by the *Initial DL Transmission Power* IE.]

[FDD - If activation of power balancing by the RADIO LINK SETUP REQUEST message is supported by the Node B, the Node B shall include the *DL Power Balancing Activation Indicator* IE in the *RL Information Response* IE in the RADIO LINK SETUP RESPONSE message.]

**[1.28Mcps TDD - Uplink Synchronisation Parameters LCR]:**

[1.28Mcps TDD - If the RADIO LINK SETUP REQUEST message contains the *Uplink Synchronisation Parameters LCR* IE, the Node B shall use the indicated values of *Uplink Synchronisation Step Size* IE and *Uplink Synchronisation Frequency* IE when evaluating the timing of the UL synchronisation.]

**General:**

If the RADIO LINK SETUP REQUEST message includes the *RL Specific DCH Information* IE, the Node B may use the transport layer address and the binding identifier received from the CRNC when establishing a transport bearer for the DCH or the set of co-ordinated DCHs.

[FDD - If the RADIO LINK SETUP REQUEST message includes the *SSDT Cell Identity* IE and the *S-Field Length* IE, the Node B shall activate SSDT, if supported, using the *SSDT Cell Identity* IE and *SSDT Cell Identity Length* IE.]

[FDD - If the RADIO LINK SETUP REQUEST message includes the *Qth Parameter* IE in addition to the *SSDT Cell Identity* IE, the Node B shall use the *Qth Parameter* IE, if Qth signalling is supported, when SSDT is activated.]

[FDD - Irrespective of SSDT activation, the Node B shall include in the RADIO LINK SETUP RESPONSE message an indication concerning the capability to support SSDT on this RL. Only if the RADIO LINK SETUP REQUEST message requested SSDT activation and the RADIO LINK SETUP RESPONSE message indicates that the SSDT capability is supported for this RL, SSDT is activated in the Node B.]

[FDD - If the RADIO LINK SETUP REQUEST message includes the *SSDT Cell Identity for EDSCHPC* IE, the Node B shall activate enhanced DSCH power control, if supported, using the *SSDT Cell Identity For EDSCHPC* IE and *SSDT Cell Identity Length* IE as well as *Enhanced DSCH PC* IE in accordance with ref. [10] subclause 5.2.2. If the RADIO LINK SETUP REQUEST message includes both *SSDT Cell Identity* IE and *SSDT Cell Identity For EDSCHPC* IE, then the Node B shall ignore the value in *SSDT Cell Identity For EDSCHPC* IE. If the enhanced DSCH power control is activated and the TFCI power control in DSCH hard split mode is supported, the primary/secondary status determination in the enhanced DSCH power control is also applied to the TFCI power control in DSCH hard split mode.]

The Node B shall start reception on the new RL(s) after the RLs are successfully established.

**[FDD - Radio Link Set Handling]:**

[FDD - The *First RLS Indicator* IE indicates if the concerned RL shall be considered part of the first RLS established towards this UE. The *First RLS Indicator* IE shall be used by the Node B together with the value of the *DL TPC Pattern 01 Count* IE which the Node B has received in the Cell Setup procedure, to determine the initial TPC pattern in the DL of the concerned RL and all RLs which are part of the same RLS, as described in [10], section 5.1.2.2.1.2.]

[FDD - For each RL not having a common generation of the TPC commands in the DL with another RL, the Node B shall assign the *RL Set ID* IE included in the RADIO LINK SETUP RESPONSE message a value that uniquely identifies the RL Set within the Node B Communication Context.]

[FDD - For all RLs having a common generation of the TPC commands in the DL with another RL, the Node B shall assign the *RL Set ID* IE included in the RADIO LINK SETUP RESPONSE message the same value. This value shall uniquely identify the RL Set within the Node B Communication Context.]

[FDD - The UL out-of-sync algorithm defined in [10] shall, for each of the established RL Set(s), use the maximum value of the parameters *N\_OUTSYNC\_IND* and *T\_RLFAILURE* that are configured in the cells supporting the radio links of the RL Set. The UL in-sync algorithm defined in [10] shall, for each of the established RL Set(s), use the minimum value of the parameters *N\_INSYNC\_IND*, that are configured in the cells supporting the radio links of the RL Set.]

**Response Message:**

If the RLs are successfully established, the Node B shall and respond with a RADIO LINK SETUP RESPONSE message.

After sending the RADIO LINK SETUP RESPONSE message the Node B shall continuously attempt to obtain UL synchronisation on the Uu interface.

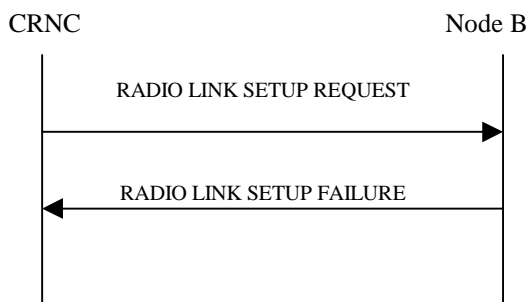
For each RL for which the *Delayed Activation* IE is not included in the RADIO LINK SETUP REQUEST message, the Node B shall:

- [FDD - start transmission on the DL DPDCH(s) of the new RL as specified in [16].]
- [TDD - start transmission on the new RL immediately as specified in [16].]

For each RL for which the *Delayed Activation* IE is included in the RADIO LINK SETUP REQUEST message, the Node B shall:

- if the *Delayed Activation* IE indicates "Separate Indication":
  - not start any DL transmission for the concerned RL on the Uu interface;
- if the *Delayed Activation* IE indicates "CFN":
  - [FDD - start transmission on the DL DPDCH(s) of the new RL as specified in [16], however never before the CFN indicated in the *Activation CFN* IE.]
  - [TDD - start transmission on the new RL at the CFN indicated in the *Activation CFN* IE as specified in [16].]

**8.2.17.3 Unsuccessful Operation**



**Figure 25: Radio Link Setup procedure, Unsuccessful Operation**

If the establishment of at least one radio link is unsuccessful, the Node B shall respond with a RADIO LINK SETUP FAILURE message. The message contains the failure cause in the *Cause* IE.

[FDD - If some radio links were established successfully, the Node B shall indicate this in the RADIO LINK SETUP FAILURE message in the same way as in the RADIO LINK SETUP RESPONSE message. In this case, the Node B shall include the *Communication Control Port Id* IE in the RADIO LINK SETUP FAILURE message.]

[FDD - If the RL identified by the *HS-PDSCH RL ID* IE is a radio link in the Node B and this RL is successfully established, then the Node B shall include the *HS-DSCH FDD Information Response* IE in the RADIO LINK SETUP FAILURE message.]

Typical cause values are as follows:

**Radio Network Layer Cause:**

- Combining not supported
- Combining Resources not available
- Requested Tx Diversity Mode not supported
- Number of DL codes not supported
- Number of UL codes not supported
- UL SF not supported
- DL SF not supported
- Dedicated Transport Channel Type not supported
- Downlink Shared Channel Type not supported
- Uplink Shared Channel Type not supported
- CM not supported
- DPC mode change not supported
- Delayed Activation not supported

**Transport Layer Cause:**

- Transport Resources Unavailable

**Miscellaneous Cause:**

- O&M Intervention
- Control processing overload
- HW failure

### 8.2.17.4 Abnormal Conditions

[FDD - If the RADIO LINK SETUP REQUEST message contains the *Active Pattern Sequence Information* IE, but the *Transmission Gap Pattern Sequence Information* IE is not present, then the Node B shall reject the procedure using the RADIO LINK SETUP FAILURE message.]

If more than one DCH of a set of co-ordinated DCHs has the *QE-Selector* IE set to "selected" [TDD – or no DCH of a set of co-ordinated DCHs has the *QE-Selector* IE set to "selected"], the Node B shall regard the Radio Link Setup procedure as failed and shall respond with a RADIO LINK SETUP FAILURE message.

If the RADIO LINK SETUP REQUEST message includes a *DCH Information* IE with multiple *DCH Specific Info* IEs, and if the DCHs in the *DCH Information* IE do not have the same *Transmission Time Interval* IE in the *Semi-static*

*Transport Format Information* IE, then the Node B shall reject the procedure using the RADIO LINK SETUP FAILURE message.

If the RADIO LINK SETUP REQUEST message includes the *Transport Layer Address* IE and the *Binding ID* IE in the *RL Specific DCH Information* IE included in the *RL Information* IE for a specific RL and the *Diversity Control Field* IE is set to "Must", the Node B shall regard the Radio Link Setup procedure as failed and respond with the RADIO LINK SETUP FAILURE message.

If the RADIO LINK SETUP REQUEST message contains the *Transport Layer Address* IE or the *Binding ID* IE, and not both are present for a transport bearer intended to be established, the Node B shall reject the procedure using the RADIO LINK SETUP FAILURE message.

[FDD - If the RADIO LINK SETUP REQUEST message includes the *Length Of TFCI2* IE but the *TFCI Signalling Option* IE is set to "Normal", then the Node B shall reject the procedure using the RADIO LINK SETUP FAILURE message.]

[FDD - If the RADIO LINK SETUP REQUEST message does not include the *Length Of TFCI2* IE but the *Split Type* IE is set to "Logical", then the Node B shall reject the procedure using the RADIO LINK SETUP FAILURE message.]

[FDD - If the RADIO LINK SETUP REQUEST message includes the *Split Type* IE set to the value "Hard" and the *Length Of TFCI2* IE set to the value "1", "2", "5", "8", "9" or "10", then the Node B shall reject the procedure using the RADIO LINK SETUP FAILURE message.]

If the RADIO LINK SETUP REQUEST message includes an *HS-PDSCH RL-ID* IE not referring to one of the radio links to be established, the Node B shall reject the procedure using the RADIO LINK SETUP FAILURE message.

If the RADIO LINK SETUP REQUEST message contains the *HS-DSCH Information* IE and if the Priority Queues associated with the same *HS-DSCH MAC-d Flow ID* IE have the same *Scheduling Priority Indicator* IE value, the Node B shall reject the procedure using the RADIO LINK SETUP FAILURE message.

## 8.2.18 Physical Shared Channel Reconfiguration

### 8.2.18.1 General

This procedure is used to assign HS-DSCH related resources to the Node B.

[TDD - This procedure is also used for handling PDSCH Sets and PUSCH Sets in the Node B, i.e.

- Adding new PDSCH Sets and/or PUSCH Sets,
- Modifying these, and
- Deleting them.]

[FDD - This procedure is also used to assign E-DCH related resources to the Node B.]

### 8.2.18.2 Successful Operation

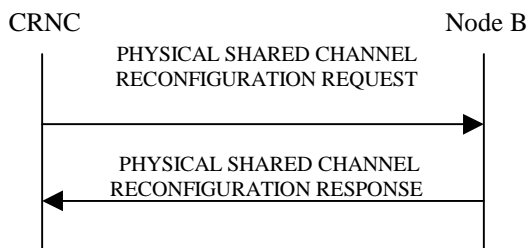


Figure 26: Physical Shared Channel Reconfiguration, Successful Operation

The procedure is initiated with a PHYSICAL SHARED CHANNEL RECONFIGURATION REQUEST message sent from the CRNC to the Node B using the Node B Control Port.

Upon reception, the Node B shall activate the new configuration at the head boundary of the SFN according to the parameters given in the message.

If the PHYSICAL SHARED CHANNEL RECONFIGURATION REQUEST message includes an *SFN* IE, the Node B shall activate the new configuration at the head boundary of that specified SFN. If no *SFN* IE is included Node B shall activate the new configuration immediately.

#### HS-DSCH Resources:

[FDD - If the PHYSICAL SHARED CHANNEL RECONFIGURATION REQUEST message includes *HS-PDSCH And HS-SCCH Total Power* IE, the Node B shall not exceed this maximum transmission power on all HS-PDSCH and HS-SCCH codes in the cell. If a value has never been set or if the value of the *HS-PDSCH And HS-SCCH Total Power* IE is equal to or greater than the maximum transmission power of the cell the Node B may use all unused power for HS-PDSCH and HS-SCCH codes.]

[FDD - If the PHYSICAL SHARED CHANNEL RECONFIGURATION REQUEST message includes *HS-PDSCH And HS-SCCH Scrambling Code* IE, the Node B shall use this as the scrambling code for all HS-PDSCHs and HS-SCCHs. If a value has never been set, the Node B shall use the primary scrambling code for all HS-PDSCH and HS-SCCH codes.]

[FDD - If the PHYSICAL SHARED CHANNEL RECONFIGURATION REQUEST message includes *HS-PDSCH FDD Code Information* IE, the Node B shall:

- if the *Number Of HS-PDSCH Codes* IE is set to "0", delete any existing HS-PDSCH resources from the cell.
- if the *Number Of HS-PDSCH Codes* IE is set to any value other than "0" and HS-PDSCH resources are not currently configured in the cell, use this list as the range of codes for HS-PDSCH channels.
- if the *Number Of HS-PDSCH Codes* IE is set to any value other than "0" and HS-PDSCH resources are currently configured in the cell, replace the current range of codes with this new range of codes for HS-PDSCH channels.]

[FDD - If the PHYSICAL SHARED CHANNEL RECONFIGURATION REQUEST message includes *HS-SCCH FDD Code Information* IE, the Node B shall:

- If the *HS-SCCH FDD Code Information* IE contains no codes, delete any existing HS-SCCH resources from the cell.
- If the *HS-SCCH FDD Code Information* IE contains one or more codes and HS-SCCH resources are not currently configured in the cell, use this list of codes as the list of codes for HS-SCCH channels.
- If the *HS-SCCH FDD Code Information* IE contains one or more codes and HS-SCCH resources are currently configured in the cell, replace the current list of codes with this new list of codes for HS-SCCH channels.]

[TDD - If the PHYSICAL SHARED CHANNEL RECONFIGURATION REQUEST message includes *HS-PDSCH and HS-SCCH Total Power* IE for a particular timeslot, the Node B shall not exceed this maximum transmission power on all HS-PDSCH and HS-SCCH codes in that timeslot. If a value has never been set for that timeslot or if the value of the *HS-PDSCH and HS-SCCH Total Power* IE for that timeslot is equal to or greater than the maximum transmission power of the cell the Node B may use all unused power in that timeslot for HS-PDSCH and HS-SCCH codes.]

[TDD - If the PHYSICAL SHARED CHANNEL RECONFIGURATION REQUEST message includes *HS-PDSCH TDD Information* IE, the Node B shall:

- If the *HS-PDSCH TDD Information* IE contains no [3.84 Mcps TDD - *DL Timeslot and Code Information* IE] [1.28 Mcps TDD - *DL Timeslot and Code Information LCR* IE], delete any existing HS-PDSCH resources from the cell.
- If the *HS-PDSCH TDD Information* IE contains [3.84 Mcps TDD - *DL Timeslot and Code Information* IE] [1.28 Mcps TDD - *DL Timeslot and Code Information LCR* IE] and HS-PDSCH resources are not currently configured in the cell, use this IE as the list of timeslots / codes for HS-PDSCH channels.
- If the *HS-PDSCH TDD Information* IE contains [3.84 Mcps TDD - *DL Timeslot and Code Information* IE] [1.28 Mcps TDD - *DL Timeslot and Code Information LCR* IE] and HS-PDSCH resources are currently configured in the cell, replace the current list of timeslots / codes with this new list of timeslots / codes for HS-PDSCH channels.]

[TDD - If the PHYSICAL SHARED CHANNEL RECONFIGURATION REQUEST message includes *Add to HS-SCCH Resource Pool* IE, the Node B shall add this resource to the HS-SCCH resource pool to be used to assign HS-SCCH sets.]

[TDD - If the PHYSICAL SHARED CHANNEL RECONFIGURATION REQUEST message includes any *Modify HS-SCCH Resource Pool* IEs and includes any of [3.84Mcps TDD - *TDD Channelisation Code* IE, *Midamble Shift and Burst Type* IE, *Time Slot* IE], [1.28Mcps TDD - *First TDD Channelisation Code* IE, *Second TDD Channelisation Code* IE, *Midamble Shift LCR* IE, *Time Slot LCR* IE, *TDD Channelisation Code* IE], for either HS-SCCH or HS-SICH channels, the Node B shall apply these as the new values, otherwise the old values specified for this set are still applicable.]

[TDD - If the PHYSICAL SHARED CHANNEL RECONFIGURATION REQUEST message includes any *Modify HS-SCCH Resource Pool* IEs and includes the *HS-SCCH Maximum Power* IE, the Node B shall apply this value for the specified HS-SCCH code otherwise the old value is still applicable.]

[TDD - If the PHYSICAL SHARED CHANNEL RECONFIGURATION REQUEST message includes any *Delete from HS-SCCH Resource Pool* IEs, the Node B shall delete these resources from the HS-SCCH resource pool.]

#### **FDD - HS-DSCH Resources:**

[FDD - If the PHYSICAL SHARED CHANNEL RECONFIGURATION REQUEST message includes *E-AGCH And E-RGCH/E-HICH FDD Scrambling Code* IE, the Node B shall use this as the scrambling code for all E-AGCHs, E-RGCHs and E-HICHs. If a value has never been set, the Node B shall use the primary scrambling code for all E-AGCH, E-RGCH and E-HICH codes.]

[FDD - If the PHYSICAL SHARED CHANNEL RECONFIGURATION REQUEST message includes *E-AGCH FDD Code Information* IE, the Node B shall:

- If the *E-AGCH FDD Code Information* IE contains no codes, delete any existing E-AGCH resources from the cell.
- If the *E-AGCH FDD Code Information* IE contains one or more codes and E-AGCH resources are not currently configured in the cell, use this list of codes as the list of codes for E-AGCH channels.
- If the *E-AGCH FDD Code Information* IE contains one or more codes and E-AGCH resources are currently configured in the cell, replace the current list of codes with this new list of codes for E-AGCH channels.]

[FDD - If the PHYSICAL SHARED CHANNEL RECONFIGURATION REQUEST message includes *E-RGCH/E-HICH FDD Code Information* IE, the Node B shall:

- If the *E-RGCH/E-HICH FDD Code Information* IE contains no codes, delete any existing E-RGCH/E-HICH resources from the cell.
- If the *E-RGCH/E-HICH FDD Code Information* IE contains one or more codes and E-RGCH/E-HICH resources are not currently configured in the cell, use this list of codes as the list of codes for E-RGCH/E-HICH channels.
- If the *E-RGCH/E-HICH FDD Code Information* IE contains one or more codes and E-RGCH/E-HICH resources are currently configured in the cell, replace the current list of codes with this new list of codes for E-RGCH/E-HICH channels.]

#### **[TDD - PDSCH/PUSCH Addition]:**

[TDD - If the PHYSICAL SHARED CHANNEL RECONFIGURATION REQUEST message includes any PDSCH sets or PUSCH sets to be added, the Node B shall add these new sets to its PDSCH/PUSCH configuration.]

[1.28Mcps TDD - If the *TSTD Indicator* IE is included in *PDSCH To Add Information LCR* IE and is set to "active", the Node B shall activate TSTD diversity for PDSCH transmissions using the specified PDSCH Set that are not beacon channels [19,21]. If the *TSTD Indicator* IE is set to "not active" or the *TSTD Indicator* IE is not included in *PDSCH To Add Information LCR* IE, the Node B shall not activate TSTD diversity for the PDSCH Set.]

#### **[TDD - PDSCH/PUSCH Modification]:**

[TDD - If the PHYSICAL SHARED CHANNEL RECONFIGURATION REQUEST message includes any PDSCH sets or PUSCH sets to be modified, and includes any of [3.84Mcps TDD - *DL/UL Code Information* IE, *Midamble Shift And Burst Type* IE, *Time Slot* IE], [1.28Mcps TDD - *DL/UL Code Information LCR* IE, *Midamble Shift LCR* IE, *Time*

*Slot LCR IE*], *TDD Physical Channel Offset IE*, *Repetition Period IE*, *Repetition Length IE*, or *TFCI Presence IE*, the Node B shall apply these as the new values, otherwise the old values specified for this set are still applicable.]

**[TDD - PDSCH/PUSCH Deletion]:**

[TDD - If the PHYSICAL SHARED CHANNEL RECONFIGURATION REQUEST message includes any PDSCH sets or PUSCH sets to be deleted the Node B shall delete these sets from its PDSCH/PUSCH configuration.]

**Response Message:**

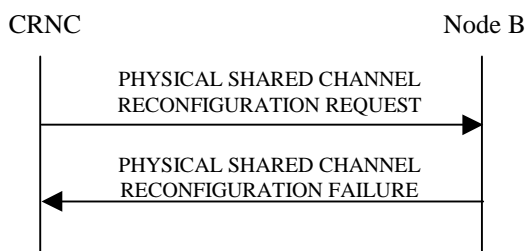
**HS-DSCH/HS-SCCH Resources:**

In the successful case involving HS-PDSCH or HS-SCCH resources, the Node B shall store the value of *Configuration Generation ID IE* and it shall make these resources available to all the current and future HS-DSCH transport channels; and shall respond with PHYSICAL SHARED CHANNEL RECONFIGURATION RESPONSE message.

**[TDD - PDSCH/PUSCH Addition/Modification/Deletion]:**

[TDD - In the successful case involving PDSCH/PUSCH addition, modification or deletion, the Node B shall add, modify and delete the PDSCH Sets and PUSCH Sets in the Common Transport Channel data base, as requested in the PHYSICAL SHARED CHANNEL RECONFIGURATION REQUEST message, and shall make these available to all the current and future DSCH and USCH transport channels. The Node B shall respond with the PHYSICAL SHARED CHANNEL RECONFIGURATION RESPONSE message.]

### 8.2.18.3 Unsuccessful Operation



**Figure 27: Physical Shared Channel Reconfiguration procedure: Unsuccessful Operation**

If the Node B is not able to support all parts of the configuration, it shall reject the configuration of all the channels in the PHYSICAL SHARED CHANNEL RECONFIGURATION REQUEST message. The *Cause IE* shall be set to an appropriate value [TDD - either a single general cause value or PDSCH and PUSCH set specific cause values for each set that caused a failure within the *Unsuccessful DL Shared Channel Set IE* for PDSCH sets or *Unsuccessful UL Shared Channel Set IE* for PUSCH sets]. The *Configuration Generation ID* shall not be changed in the Node B.

If the configuration was unsuccessful, the Node B shall respond with the PHYSICAL SHARED CHANNEL RECONFIGURATION FAILURE message:

Typical cause values are as follows:

**Radio Network Layer Cause:**

- Cell not available
- Node B Resources unavailable

**Transport Layer Cause:**

- Transport Resources Unavailable

**Miscellaneous Cause:**

- O&M Intervention
- Control processing overload

- HW failure

## 8.2.18.4 Abnormal Conditions

[TDD - If the PHYSICAL SHARED CHANNEL RECONFIGURATION REQUEST message contains *Add to HS-SCCH Resource Pool* IE, the *Modify HS-SCCH Resource Pool* IE, or the *Delete from HS-SCCH Resource Pool* IE and does not contain the *Configuration Generation ID* the Node B shall consider the procedure as having failed and shall send the PHYSICAL SHARED CHANNEL RECONFIGURATION FAILURE message to the CRNC.]

[TDD - If the PHYSICAL SHARED CHANNEL RECONFIGURATION REQUEST message contains the the *Configuration Generation ID* IE and does not contain at least one of *Add to HS-SCCH Resource Pool* IE, the *Modify HS-SCCH Resource Pool* IE, or the *Delete from HS-SCCH Resource Pool* IE the Node B shall consider the procedure as having failed and shall send the PHYSICAL SHARED CHANNEL RECONFIGURATION FAILURE message to the CRNC.]

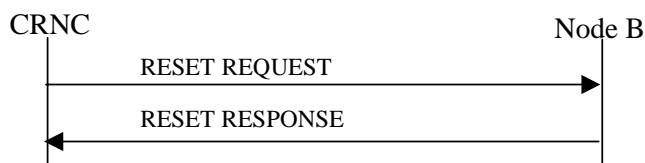
## 8.2.19 Reset

### 8.2.19.1 General

The purpose of the Reset procedure is to align the resources in the CRNC and the Node B in the event of an abnormal failure. The CRNC or the Node B may initiate the procedure.

### 8.2.19.2 Successful Operation

#### 8.2.19.2.1 Reset Initiated by the CRNC



**Figure 27A Reset procedure (CRNC to Node B), Successful Operation**

The procedure is initiated with a RESET REQUEST message sent from the CRNC to the Node B using the Node B Control Port.

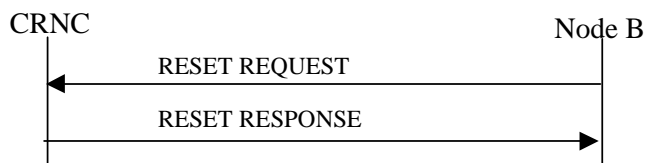
If the *Reset Indicator* IE is set to "Communication Context", the Node B shall remove all the indicated Node B Communication Contexts (identified by a *Node B Communication Context ID* or a *CRNC Communication Context ID* IE) and all the radio resources allocated for these Node B Communication Contexts. The Node B shall also initiate release of the user plane transport bearers that were involved in these Contexts. After clearing all related resources, the Node B shall return the RESET RESPONSE message to the CRNC.

If the *Reset Indicator* IE is set to "Communication Control Port", the Node B shall remove all the Node B Communication Contexts controlled via the indicated Communication Control Port(s) and all the radio resources allocated for these Node B Communication Contexts. The Node B shall also initiate release of the user plane transport bearers that were involved in these Contexts. After clearing all related resources, the Node B shall return the RESET RESPONSE message to the CRNC.

If the *Reset Indicator* IE is set to "Node B", the Node B shall remove all the Node B Communication Contexts within the Node B and all the radio resources allocated for these Node B Communication Contexts. The Node B shall also initiate release of the user plane transport bearers that were involved in these Contexts. After clearing all related resources, the Node B shall return the RESET RESPONSE message to the CRNC.



## 8.2.19.2.2 Reset Initiated by the Node B



**Figure 27B Reset procedure (Node B to CRNC ), Successful Operation**

The procedure is initiated with a RESET REQUEST message sent from the Node B to the CRNC using the Node B Control Port.

If the *Reset Indicator* IE is set to "Communication Context", for all indicated CRNC Communication Contexts (indicated by a *CRNC Communication Context ID* or a *Node B Communication Context ID* IE), the CRNC shall remove the information related to this Node B and all the radio resources allocated in the CRNC. The CRNC shall also initiate release of the user plane transport bearers towards the Node B involved in the indicated CRNC Communication Contexts. After clearing all related resources, the CRNC shall return the RESET RESPONSE message to the Node B.

If the *Reset Indicator* IE is set to "Communication Control Port", for all the CRNC Communication Contexts controlled via the indicated Communication Control Port(s), the CRNC shall remove the information related to this Node B and all the radio resources allocated in the CRNC. The CRNC shall also initiate release of the user plane transport bearers towards the Node B involved in the CRNC Communication Contexts controlled via the indicated Communication Control Port(s). After clearing all related resources, the CRNC shall return the RESET RESPONSE message to Node B.

If the *Reset Indicator* IE is set to the "Node B", for all the CRNC Communication Contexts related to this Node B, the CRNC shall remove the information related to this Node B and all the radio resources allocated in the CRNC. The CRNC shall also initiate release of the user plane transport bearers towards the Node B involved in the CRNC Communication Contexts related to this Node B. After clearing all related resources, the CRNC shall return the RESET RESPONSE message to Node B.

## 8.2.19.3 Unsuccessful Operation

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## 8.2.19.4 Abnormal Conditions

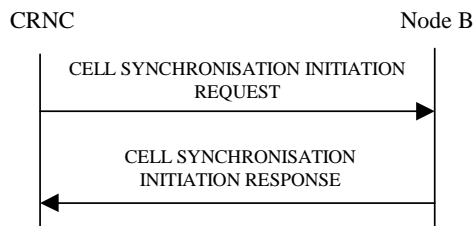
If the RESET REQUEST message is received any ongoing procedure related to a CRNC Communication Context in the CRNC or Node B Communication Context in the Node B indicated (explicitly or implicitly) in the message shall be aborted.

## 8.2.20 Cell Synchronisation Initiation [TDD]

## 8.2.20.1 General

This procedure is used by a CRNC to request the transmission of [3.84Mcps TDD - Cell Synchronisation Bursts sent in the PRACH time slots] [1.28Mcps TDD - SYNC\_DL code sent in the DwPTS] and/or to start measurements on [3.84Mcps TDD - Cell Synchronisation Bursts] [1.28Mcps TDD - SYNC\_DL code] in a Node B.

## 8.2.20.2 Successful Operation



**Figure 27C Cell Synchronisation Initiation procedure, Successful Operation**

The procedure is initiated with a CELL SYNCHRONISATION INITIATION REQUEST message sent from the CRNC to the Node B using the Node B Control Port.

Upon reception, the Node B shall initiate the requested transmission according to the parameters given in the request and start the measurement on [3.84Mcps TDD - Cell Synchronisation Bursts] [1.28Mcps TDD - SYNC\_DL code] if requested.

**[3.84Mcps TDD - Cell Sync Burst Transmission Initiation] [1.28Mcps TDD - SYNC\_DL Code Transmission Initiation LCR]:**

When the [3.84Mcps TDD - Cell Sync Burst Transmission Initiation Information] [1.28Mcps TDD - SYNC\_DL Code Transmission Initiation Information LCR] is present, the Node B shall configure the transmission of the cell synchronisation burst according to the parameters given in the CELL SYNCHRONISATION INITIATION REQUEST message. The *SFN* IE indicates the frame number when the cell shall start transmitting cell synchronisation bursts.

[3.84Mcps TDD - When the Cell Sync Burst Transmission Initiation Information is present and the "Frequency Acquisition" is indicated within the *Synchronisation Report Type* IE, the Node B shall first perform only frequency locking on received cell synchronisation bursts. Transmission of the indicated cell synchronisation bursts shall be started only if the frequency locking is performed successfully and "Frequency Acquisition completed" is reported to the RNC.]

**[3.84Mcps TDD - Cell Sync Burst Measurement characteristics] [1.28Mcps TDD - SYNC\_DL Code Measurement characteristics LCR]:**

When the [3.84Mcps TDD - Cell Sync Burst Measurement Initiation Information][1.28Mcps TDD – SYNC\_DL Code Measurement Initiation Information LCR] is present, the Node B shall initiate measurements on the indicated cell synchronisation burst.

If the *SFN* IE is present, the Node B shall after measurement of the indicated [3.84Mcps TDD - Cell Synchronisation Burst] [1.28Mcps TDD - SYNC\_DL Code] adjust the frame number of the indicated cell according to the *SFN* of the CELL SYNCHRONISATION INITIATION REQUEST message. This adjustment shall only apply to the late entrant cell at the late entrant phase.

**Synchronisation Report characteristics:**

The *Synchronisation Report Characteristics* IE indicates how the reporting of the [3.84Mcps TDD - Cell Synchronisation Burst] [1.28Mcps TDD - SYNC\_DL Code] measurement shall be performed. Whenever the Cell Synchronisation Initiation procedure is initiated, only [3.84Mcps TDD - the "Frequency Acquisition completed" or] "Frame related" report characteristics type shall apply.

[3.84Mcps TDD - If the *Synchronisation Report characteristics type* IE is set to "Frequency Acquisition completed", the Node B shall signal completion of frequency acquisition to the RNC when locking is completed.]

If the *Synchronisation Report characteristics type* IE is set to "Frame related", the Node B shall report the result of the cell synchronisation burst measurement after every measured frame.

[3.84Mcps TDD - If the *Cell Sync Burst Arrival Time* IE is included in the *Cell Sync Burst Information* IE of the *Synchronisation Report Characteristics* IE, it indicates to the Node B the reference time at which the reception of the cell synchronisation burst of a neighbouring cell is expected.]

[3.84Mcps TDD - If the *Cell Sync Burst Timing Threshold* IE is included in the *Cell Sync Burst Information* IE of the *Synchronisation Report Characteristics* IE, the Node B shall use this threshold as a trigger for the CELL SYNCHRONISATION REPORT message.]

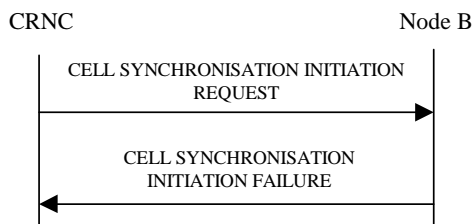
[1.28Mcps TDD - If the *SYNC\_DL Code ID Arrival Time* IE is included in the *SYNC\_DL Code Information LCR* IE of the *Synchronisation Report Characteristics* IE, it indicates to the Node B the reference time at which the reception of the SYNC\_DL Code of a neighbouring cell is expected.]

[1.28Mcps TDD - If the *SYNC\_DL Code ID Timing Threshold* IE is included in the *SYNC\_DL Code Information LCR* IE of the *Synchronisation Report Characteristics* IE, the Node B shall use this threshold as a trigger for the CELL SYNCHRONISATION REPORT message.]

**Response message:**

If the Node B was able to initiate the [3.84Mcps TDD - Cell Synchronisation Burst] [1.28Mcps TDD - SYNC\_DL Code] transmission and/or measurement requested by the CRNC it shall respond with the CELL SYNCHRONISATION INITIATION RESPONSE message sent over the Node B Control Port.

8.2.20.3 Unsuccessful Operation



**Figure 27D Cell Synchronisation Initiation procedure, Unsuccessful Operation**

If the requested transmission or measurement on [3.84Mcps TDD - Cell Synchronisation Bursts] [1.28Mcps TDD - SYNC\_DL Code] cannot be initiated, the Node B shall send a CELL SYNCHRONISATION INITIATION FAILURE message over the Node B control port. The message shall include the *Cause* IE set to an appropriate value.

Typical cause values are as follows:

**Radio Network Layer Cause:**

- Cell Synchronisation not supported
- Power level not supported
- Measurement Temporarily not Available
- Frequency Acquisition not supported

**Miscellaneous Cause:**

- O&M Intervention
- HW failure

8.2.20.4 Abnormal Conditions

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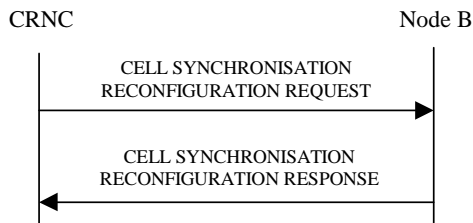
8.2.21 Cell Synchronisation Reconfiguration [TDD]

8.2.21.1 General

This procedure is used by a CRNC to reconfigure the transmission of [3.84Mcps TDD - Cell Synchronisation Bursts] [1.28Mcps TDD - SYNC\_DL Code] and/or to reconfigure measurements on [3.84Mcps TDD - Cell Synchronisation Bursts] [1.28Mcps TDD - SYNC\_DL Code] in a Node B.

## 8.2.21.2 Successful Operation

### 8.2.21.2.1 General



**Figure 27E Cell Synchronisation Reconfiguration procedure, Successful Operation**

The procedure is initiated with a CELL SYNCHRONISATION RECONFIGURATION REQUEST message sent from the CRNC to the Node B using the Node B Control Port.

Upon reception, the Node B shall reconfigure the [3.84Mcps TDD - Cell Synchronisation Burst] [1.28Mcps TDD - SYNC\_DL Code] transmission and/or measurements according to the parameters given in the request.

#### 8.2.21.2.2 [3.84Mcps TDD - Cell Sync Burst Schedule]

Within the CELL SYNCHRONISATION RECONFIGURATION REQUEST message first the schedule for the steady state phase is fixed. I.e. the number of cycles per SFN period is defined with the same schedule. For each cycle, the number of repetitions is defined according to following equations:

Cycle length:  $4096 / \text{value of } \textit{Number Of Cycles Per SFN Period IE}$

Repetition period:  $\text{Cycle length} / \text{value of } \textit{Number Of Repetitions Per Cycle Period IE}$

Cell Sync Frame number is calculated by:

$$\text{SFN} = \text{floor}((k-1) * \text{Cycle length} + (i-1) * \text{Repetition period})$$

$$k = \{1, 2, 3, \dots \text{Number of cycle per SFN period}\}$$

$$i = \{1, 2, 3, \dots \text{Cell Sync Frame number within cycle period}\}$$

#### 8.2.21.2.3 [1.28Mcps TDD - SYNC\_DL Code Schedule]

Within the CELL SYNCHRONISATION RECONFIGURATION REQUEST message first the schedule for the steady state phase is fixed. The "schedule" includes

- the list of frame numbers SFN within the SFN period where SYNC\_DL Code transmission or reception takes place, i.e. the "synchronisation frames", and
- the associated actions (SYNC\_DL Code transmission, reception, averaging, reporting etc) to be performed for synchronisation purpose by the Node B at each of these SFNs.

Within the synchronisation frames, only the first subframe shall be used for sending or receiving a SYNC\_DL Code in the DwPTS while in the second subframe, normal operation continues.

The synchronisation schedule includes the option of averaging of measured correlation results within the Node B over a sequence of measurements, for increasing the reliability of the Time of Arrival measurement obtained from the correlation results. For this purpose, the concept of "subcycles" has been introduced: Each Synchronisation Cycle is divided into "subcycles" where in each subcycle, the same set of SYNC\_DL transmissions and receptions is performed, and averaging takes place over all the subcycles within a Synchronisation Cycle. Since the list of actions (transmission, measurements etc) is the same in each subcycle, and the subcycles are repeated to make up a cycle, and the cycles make up an SFN period, the full list of actions is derived by the actions specified for a subcycle.

The full list of SFNs which make up the synchronisation schedule within the SFN period are calculated in Node B and CRNC autonomously based on the following parameters included in the CELL SYNCHRONISATION RECONFIGURATION REQUEST message: "Number of cycles per SFN period", "Number of subcycles per cycle period", and "Number of repetitions per cycle period", along the following equations:

Cycle length:  $4096 / \text{value of } \textit{Number Of Cycles Per SFN Period IE}$

Subcycle length:  $\text{Cycle length} / \text{value of } \textit{Number Of Subcycles Per Cycle Period IE}$

Repetition period:  $\text{Subcycle length} / \text{value of } \textit{Number Of Repetitions Per Cycle Period IE}$

$$\text{SFN} = \text{floor}((k-1) * \text{Cycle length} + (j-1)*\text{Subcycle length} + (i-1)* \text{Repetition period})$$

$$k = \{1, 2, 3, .. \text{Number of cycle per SFN period}\}$$

$$j = \{1, 2, 3, .. \text{Number of subcycles per cycle}\}$$

$$i = \{1, 2, 3, .. \text{Number of repetitions per cycle period}\}$$

Note that if the *Number Of Subcycles Per Cycle IE* is equal to 1, then the subcycles are identical to the "Synchronisation Cycles".

If the *Number Of Subcycles Per Cycle IE* is included in the CELL SYNCHRONISATION RECONFIGURATION REQUEST [TDD] message, then the Node B shall apply this number for dividing the Synchronisation Cycles in Subcycles. If the IE is not present, then the Node B shall assume that there is one subcycle per synchronisation cycle only, which is identical to the synchronisation cycle.

Averaging is performed as follows:

- From each SYNC\_DL code being received according to the schedule, the Node B shall calculate a "correlation function" by matching the received data with the respective expected code.
- Therefore the set of measurements within one subcycle provides a set of "correlation functions".
- The set of correlation functions of the first subcycle within a synchronisation cycle is stored in an averaging memory.
- The sets of correlation functions of the subsequent subcycles within a synchronisation cycle are combined with the available contents of the "averaging memory", to produce an average over all the sets of correlation functions within a synchronisation cycle.
- At the end of a synchronisation cycle, the Time-of-Arrival measurements for that synchronisation cycle are obtained by evaluating the final set of correlation functions.

These Time-of-Arrival measurements, together with associated SIR values obtained from the averaged correlation functions, are included in a Measurement Report to the CRNC, according to a measurement reporting plan.

In addition, the Time-of-Arrival measurements may optionally be used for autonomous self-adjustment of the timing of the respective cell.

#### 8.2.21.2.4 [3.84Mcps TDD - Cell Sync Burst Transmission Reconfiguration] [1.28Mcps TDD - SYNC\_DL Code Transmission Reconfiguration]

When the [3.84Mcps TDD - Cell Sync Burst Transmission Reconfiguration Information] [1.28Mcps TDD - SYNC\_DL Code Transmission Reconfiguration Information LCR] is present, the Node B shall reconfigure the transmission of the [3.84Mcps TDD - cell synchronisation burst] [1.28Mcps TDD - SYNC\_DL Code] according to the parameters given in the CELL SYNCHRONISATION RECONFIGURATION REQUEST message.

[3.84Mcps TDD - If the CELL SYNCHRONISATION RECONFIGURATION REQUEST message includes the *Cell Sync Burst Code IE*, the Node B shall reconfigure the synchronisation code in the cell according to the *Cell Sync Burst Code IE* value.]

[3.84Mcps TDD - If the CELL SYNCHRONISATION RECONFIGURATION REQUEST message includes the *Cell Sync Burst Code Shift IE*, the Node B shall reconfigure the synchronisation code shift in the cell according to the *Cell Sync Burst Code Shift IE* value.]

[3.84Mcps TDD - If the CELL SYNCHRONISATION RECONFIGURATION REQUEST message includes the *DL Transmission Power IE*, the Node B shall reconfigure the DL transmission power of the cell synchronisation burst in the cell according to the *DL Transmission Power IE* value.]

[1.28Mcps TDD - If the CELL SYNCHRONISATION RECONFIGURATION REQUEST message includes the *DwPCH Power IE*, the Node B shall store the DwPCH power according to the *DwPCH Power IE* value. For the duration of those subsequent transmissions of the DwPCH which are specifically for the purpose of Node B synchronisation the power of the DwPCH shall be set to the stored power. During subsequent transmissions of the DwPCH which are for normal operation the power of the DwPCH shall assume its normal level.]

[1.28Mcps TDD - If the CELL SYNCHRONISATION RECONFIGURATION REQUEST message includes the *Sync\_DL Code ID IE*, the Node B shall reconfigure the SYNC\_DL Code in the cell according to the *Sync\_DL Code ID IE* value.]

#### 8.2.21.2.5 [3.84Mcps TDD - Cell Sync Burst Measurement Reconfiguration] [1.28Mcps TDD - SYNC\_DL Code Measurement Reconfiguration]

When the [3.84Mcps TDD - Cell Sync Burst Measurement Reconfiguration Information] [1.28Mcps TDD - Cell SYNC\_DL Code Measurement Reconfiguration Information LCR] is present, the Node B shall reconfigure the [3.84Mcps TDD - Cell Synchronisation Burst] [1.28Mcps TDD - SYNC\_DL Code] measurements according the parameters given in the message.

If the CELL SYNCHRONISATION RECONFIGURATION REQUEST message includes the [3.84Mcps TDD -Cell Sync Burst Measurement Information] [1.28Mcps TDD – SYNC\_DL Code Measurement Information LCR], the measurements shall apply on the individual [3.84Mcps TDD - Cell Synchronisation Bursts] [1.28Mcps TDD - SYNC\_DL Codes] on the requested Sync Frame number.

[1.28Mcps TDD - When the *Propagation Delay Compensation IE* is present in the SYNC\_DL Code Measurement Information LCR, the Node B shall, if supported, perform the following functions: (1) use the respective SYNC\_DL measurement (after potential averaging) to perform the self-adjustment of the respective cell's timing at the end of a Synchronisation Cycle; (2) include the *Accumulated Clock Update IE* in the CELL SYNCHRONISATION REPORT message, to report the total accumulated amount of timing adjustments since the last report to the RNC. This Accumulated Clock Update value shall also include the adjustments which may have been performed by explicit order from the CRNC in the CELL SYNCHRONISATION ADJUSTMENT REQUEST message. The times for self-adjustment at the end of a synchronisation cycle shall be independent from the measurement reporting characteristics; the Accumulated Adjustment values shall be included in the CELL SYNCHRONISATION REPORT messages without influencing the frequency of measurement reporting.]

If the *Synchronisation Report Type IE* is provided, the measurement reporting shall apply according the parameter given in the message.

#### **Synchronisation Report characteristics:**

The *Synchronisation Report Characteristics IE* indicates how the reporting of the cell synchronisation burst measurement shall be performed.

If the *Synchronisation Report Characteristics Type IE* is set to "Frame related", the Node B shall report the result of the [3.84Mcps TDD - Cell Synchronisation Burst] [1.28Mcps TDD – SYNC\_DL Code] measurement after every measured frame.

If the *Synchronisation Report Characteristics Type IE* is set to "SFN period related", the Node B shall report the result of the [3.84Mcps TDD - Cell Synchronisation Burst] [1.28Mcps TDD – SYNC\_DL Code] measurements after every SFN period.

If the *Synchronisation Report Characteristics Type IE* is set to "Cycle length related", the Node B shall report the result of the [3.84Mcps TDD - Cell Synchronisation Burst] [1.28Mcps TDD – SYNC\_DL Code] measurements after every cycle length within the SFN period.

If the *Synchronisation Report Characteristics Type IE* is set to "Threshold exceeding", the Node B shall report the result of the [3.84Mcps TDD - Cell Synchronisation Burst] [1.28Mcps TDD - SYNC\_DL Code] measurement when the [3.84Mcps TDD - Cell Synchronisation Burst timing] [1.28Mcps TDD – SYNC\_DL Code timing] rises or falls more than the requested threshold value compared to the arrival time in synchronised state which is represented by the [3.84Mcps TDD - *Cell Sync Burst Arrival Time IE*] [1.28Mcps TDD – *SYNC\_DL Code ID Arrival Time IE*].

[3.84Mcps TDD - If the *Cell Sync Burst Arrival Time IE* is included in the *Cell Sync Burst Information IE* of the *Synchronisation Report Characteristics IE*, it indicates to the Node B the reference time at which the reception of the cell synchronisation burst of a neighbouring cell is expected.]

[3.84Mcps TDD - If the *Cell Sync Burst Timing Threshold* IE is included in the *Cell Sync Burst Information* IE of the *Synchronisation Report Characteristics* IE, the Node B shall use this new threshold as a trigger for the CELL SYNCHRONISATION REPORT message.]

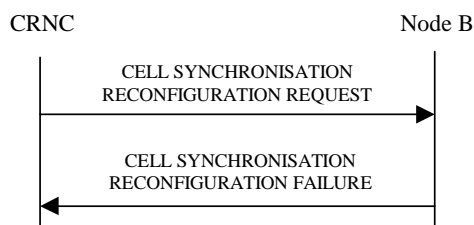
[1.28Mcps TDD - If the *SYNC\_DL Code ID Arrival Time* IE is included in the *SYNC\_DL Code Information LCR* IE of the *Synchronisation Report Characteristics* IE, it indicates to the Node B the reference time at which the reception of the SYNC\_DL Code of a neighbouring cell is expected.]

[1.28Mcps TDD - If the *SYNC\_DL Code ID Timing Threshold* IE is included in the *SYNC\_DL Code Information LCR* IE of the *Synchronisation Report Characteristics* IE, the Node B shall use this threshold as a trigger for the CELL SYNCHRONISATION REPORT message.]

#### Response message:

If the Node B was able to reconfigure the [3.84Mcps TDD - Cell Synchronisation Burst] [1.28Mcps TDD – SYNC\_DL Code] transmission and/or measurement requested by the CRNC, it shall respond with the CELL SYNCHRONISATION RECONFIGURATION RESPONSE message sent over the Node B Control Port.

### 8.2.21.3 Unsuccessful Operation



**Figure 27F Cell Synchronisation Reconfiguration procedure, Unsuccessful Operation**

If the Node B cannot reconfigure the requested transmission or measurement on [3.84Mcps TDD - Cell Synchronisation Burst] [1.28Mcps TDD - SYNC\_DL Code], the CELL SYNCHRONISATION RECONFIGURATION FAILURE message shall be sent to the CRNC. The message shall include the *Cause* IE set to an appropriate value.

Typical cause values are as follows:

#### Radio Network Layer Cause:

- Cell Synchronisation not supported
- Power level not supported
- Measurement Temporarily not Available

#### Miscellaneous Cause:

- O&M Intervention
- HW failure

### 8.2.21.4 Abnormal Conditions

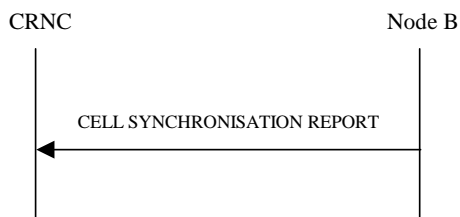
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## 8.2.22 Cell Synchronisation Reporting [TDD]

### 8.2.22.1 General

This procedure is used by a Node B to report the result of [3.84Mcps TDD - Cell Synchronisation Burst] [1.28Mcps TDD - SYNC\_DL Code] measurements requested by the CRNC with the Cell Synchronisation Initiation or Cell Synchronisation Reconfiguration procedure.

8.2.22.2 Successful Operation



**Figure 27G Cell Synchronisation Reporting procedure, Successful Operation**

If the requested synchronisation measurement reporting criteria are met, the Node B shall initiate a Cell Synchronisation Reporting procedure. The CELL SYNCHRONISATION REPORT message shall use the Node B Control Port.

In the steady state phase when several [3.84Mcps TDD - Cell Synchronisation Bursts] [1.28Mcps TDD - SYNC\_DL Codes] shall be measured per Sync Frame number, the sequence of the reported measured values shall be the same as defined in the Cell Synchronisation Reconfiguration procedure.

[1.28Mcps TDD - The Node B shall, if supported, include the *Accumulated Clock Update* IE in the CELL SYNCHRONISATION REPORT message whenever the CRNC has included at least one instance of the *Propagation Delay Compensation* IE in the CELL SYNCHRONISATION RECONFIGURATION REQUEST message. The *Accumulated Clock Update* IE shall include the accumulated timing adjustment which has been done as commanded by the CRNC, as well as by self-adjustment, since the last *Accumulated Clock Update* IE report.]

If the achieved measurement accuracy does not fulfil the given accuracy requirement defined in [23], the Cell Sync Burst not available shall be reported.

8.2.22.3 Abnormal Conditions

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8.2.23 Cell Synchronisation Termination [TDD]

8.2.23.1 General

This procedure is used by the CRNC to terminate a [3.84Mcps TDD - Cell Synchronisation Burst] [1.28Mcps TDD - SYNC\_DL Code] transmission or measurement previously requested by the Cell Synchronisation Initiation procedure or Cell Synchronisation Reconfiguration procedure.

8.2.23.2 Successful Operation



**Figure 27H Cell Synchronisation Termination procedure, Successful Operation**

This procedure is initiated with a CELL SYNCHRONISATION TERMINATION REQUEST message, sent from the CRNC to the Node B using the Node B Control Port.



Upon reception, the Node B shall terminate [3.84Mcps TDD - transmission of Cell Synchronisation Bursts or reporting of Cell Synchronisation Burst measurements] [1.28Mcps TDD - transmission of SYNC\_DL Codes or reporting of SYNC\_DL Code measurements] corresponding to the *CSB Transmission ID* IE or *CSB Measurement ID* IE.

### 8.2.23.3 Abnormal Conditions

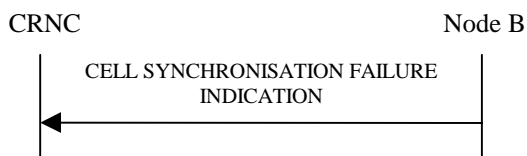
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## 8.2.24 Cell Synchronisation Failure [TDD]

### 8.2.24.1 General

This procedure is used by the Node B to notify the CRNC that a [3.84Mcps TDD – Cell Synchronisation Burst] [1.28Mcps TDD - SYNC\_DL Code] transmission or synchronisation measurement procedure can no longer be supported.

### 8.2.24.2 Successful Operation



**Figure 271 Cell Synchronisation Failure procedure, Successful Operation**

This procedure is initiated with a CELL SYNCHRONISATION FAILURE INDICATION message, sent from the Node B to the CRNC using the Node B Control Port, to inform the CRNC that a previously requested transmission or measurement on [3.84Mcps TDD - Cell Synchronisation Bursts] [1.28Mcps TDD – SYNC\_DL Codes] can no longer be supported.

If the transmission of a [3.84Mcps TDD – Cell Synchronisation Burst] [1.28Mcps TDD - SYNC\_DL Code] has failed, then the Node B shall include the *CSB Transmission ID* IE in the CELL SYNCHRONISATION FAILURE INDICATION message to uniquely identify the concerned [3.84Mcps TDD – Cell Synchronisation Burst] [1.28Mcps TDD - SYNC\_DL Code] Transmission.

If the measurement of a [3.84Mcps TDD – Cell Synchronisation Burst] [1.28Mcps TDD - SYNC\_DL Code] has failed, then the Node B shall include the *CSB Measurement ID* IE in the CELL SYNCHRONISATION FAILURE INDICATION message to uniquely identify the concerned [3.84Mcps TDD – Cell Synchronisation Burst] [1.28Mcps TDD - SYNC\_DL Code] Measurement.

### 8.2.24.3 Abnormal Conditions

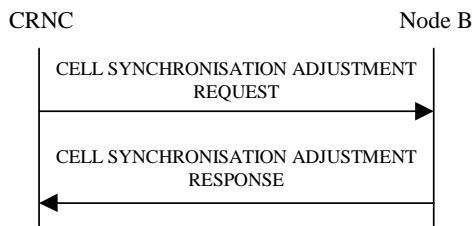
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## 8.2.25 Cell Synchronisation Adjustment [TDD]

### 8.2.25.1 General

The purpose of Cell Synchronisation Adjustment procedure is to allow the CRNC to adjust the timing of the radio transmission of a cell within a Node B for time alignment.

### 8.2.25.2 Successful Operation



**Figure 27J Cell Synchronisation Adjustment, Successful Operation**

This procedure is initiated with a CELL SYNCHRONISATION ADJUSTMENT REQUEST message sent by the CRNC to the Node B using the Node B Control Port.

Upon reception, the Node B adjusts its timing according to the parameters given in the message.

If the CELL SYNCHRONISATION ADJUSTMENT REQUEST message includes the *Frame Adjustment Value* IE the Node B shall apply the frame adjustment in the cell according to the *Frame Adjustment Value* IE value.

[3.84Mcps TDD - If the CELL SYNCHRONISATION ADJUSTMENT REQUEST message includes the *Timing Adjustment Value* IE the Node B shall apply the timing adjustment in the cell according to the *Timing Adjustment Value* IE value.]

[1.28Mcps TDD – If the CELL SYNCHRONISATION ADJUSTMENT REQUEST message includes the *Timing Adjustment Value LCR* IE the Node B shall apply the timing adjustment in the cell according to the *Timing Adjustment Value LCR* IE value.]

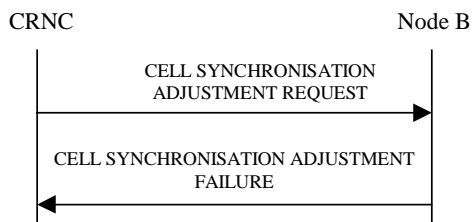
[3.84Mcps TDD - If the CELL SYNCHRONISATION ADJUSTMENT REQUEST message includes the *DL Transmission Power* IE, the Node B shall apply the transmission power of the Cell Synchronisation Burst according to the *DL Transmission Power* IE value.]

[1.28Mcps TDD - If the CELL SYNCHRONISATION ADJUSTMENT REQUEST message includes the *DwPCH Power* IE, the Node B shall store the DwPCH power according to the *DwPCH Power* IE value. For the duration of those subsequent transmissions of the DwPCH which are specifically for the purpose of Node B synchronisation the power of the DwPCH shall be set to the stored power. During subsequent transmissions of the DwPCH which are for normal operation the power of the DwPCH shall assume its normal level.]

If the CELL SYNCHRONISATION ADJUSTMENT REQUEST message includes the *SFN* IE, the Node B shall apply the synchronisation adjustment starting with the SFN number indicated in the message.

When the cell synchronisation adjustment is successfully done by the Node B, the Node B shall respond with a CELL SYNCHRONISATION ADJUSTMENT RESPONSE message.

### 8.2.25.3 Unsuccessful Operation



**Figure 27K Cell Synchronisation Adjustment, Unsuccessful Operation**

If the Node B cannot perform the indicated cell synchronisation adjustment due to hardware failure or other problem it shall send the CELL SYNCHRONISATION ADJUSTMENT FAILURE as a response.

Typical cause values are as follows:

#### Radio Network Layer Cause

- Cell Synchronisation Adjustment not supported

- Power level not supported

#### Miscellaneous Cause

- O&M Intervention
- HW failure

### 8.2.25.4 Abnormal Conditions

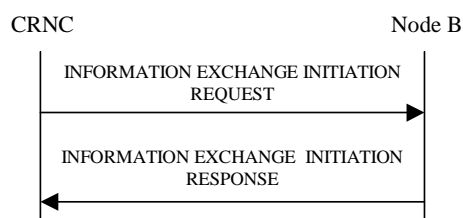
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## 8.2.26 Information Exchange Initiation

### 8.2.26.1 General

This procedure is used by a CRNC to request the initiation of information provisioning from a Node B.

### 8.2.26.2 Successful Operation



**Figure 27L: Information Exchange Initiation procedure, Successful Operation**

The procedure is initiated with the INFORMATION EXCHANGE INITIATION REQUEST message sent from the CRNC to the Node B using the Node B Control Port.

Upon reception, the Node B shall provide the requested information according to the *Information Type Item* IE. Unless specified below, the meaning of the parameters are given in other specifications.

#### Information Report Characteristics

The *Information Report Characteristics* IE indicates how the reporting of the information shall be performed.

If the *Information Report Characteristics* IE is set to "On Demand", the Node B shall report the requested information immediately.

If the *Information Report Characteristics* IE is set to "Periodic", the Node B shall immediately report the requested information and then shall periodically initiate the Information Reporting procedure for all the requested information, with the requested reporting frequency.

If the *Information Report Characteristics* IE is set to "On Modification", the Node B shall immediately report the requested information if available. If the requested information is not available at the moment of receiving the INFORMATION EXCHANGE INITIATION REQUEST message, but expected to become available after some acquisition time, the Node B shall initiate the Information Reporting procedure when the requested information becomes available. The Node B shall then initiate the Information Reporting procedure in accordance to the following conditions related to the *Information Type* IE:

- 1) If the *Information Type Item* IE is set to "DGPS Corrections", the Node B shall initiate the Information Reporting procedure when either the PRC has drifted from the previously reported value more than the threshold indicated in the *PRC Deviation* IE in the *Information Threshold* IE or a change has occurred in the IODE.
- 2) If the *Information Type Item* IE is set to "GPS Information" and the *GPS Information Item* IE includes "GPS Navigation Model & Time Recovery", the Node B shall initiate the Information Reporting procedure for this

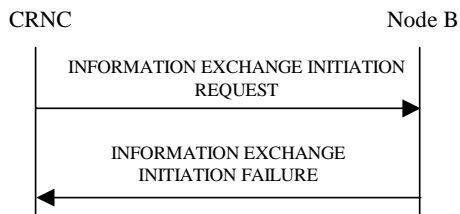
specific GPS Information Item when a change has occurred regarding either the IODC or the list of visible satellites, identified by the *Sat ID* IEs.

- 3) If the *Information Type Item* IE is set to "GPS Information" and the *GPS Information Item* IE includes "GPS Ionospheric Model", the Node B shall initiate the Information Reporting procedure for this specific GPS Information Item when any change has occurred.
- 4) If the *Information Type Item* IE is set to "GPS Information" and the *GPS Information Item* IE includes "GPS UTC Model", the Node B shall initiate the Information Reporting procedure for this specific GPS Information Item when a change has occurred in the  $t_{ot}$  or  $WN_t$  parameter.
- 5) If the *Information Type Item* IE is set to "GPS Information" and the *GPS Information Item* IE includes "GPS Almanac", the Node B shall initiate the Information Reporting procedure for this specific GPS Information Item when a change in the  $t_{oa}$  or  $WN_a$  parameter has occurred.
- 6) If the *Information Type Item* IE is set to "GPS Information" and the *GPS Information Item* IE includes "GPS Real-Time Integrity", the Node B shall initiate the Information Reporting procedure for this specific GPS Information Item when any change has occurred.
- 7) If any of the above *Information Type* IEs becomes temporarily unavailable, the Node B shall initiate the Information Reporting procedure for this specific Information Item by indicating "Information Not Available" in the *Requested Data Value Information* IE. If the Information becomes available again, the Node B shall initiate the Information Reporting procedure for this specific Information.

**Response message**

If the Node B is able to initiate the information provision requested by the CRNC, it shall respond with the INFORMATION EXCHANGE INITIATION RESPONSE message sent over the Node B Control Port. The message shall include the same Information Exchange ID that was included in the INFORMATION EXCHANGE INITIATION REQUEST message. When the *Report Characteristics* IE is set to "On Modification" or "Periodic", the INFORMATION EXCHANGE INITIATION RESPONSE message shall contain the requested data if the data are available. When the *Report Characteristics* IE is set to "On Demand", the INFORMATION EXCHANGE INITIATION RESPONSE message shall contain the *Requested Data Value* IE.

**8.2.26.3 Unsuccessful Operation**



**Figure 27M: Information Exchange Initiation procedure, Unsuccessful Operation**

If the Information Type Item received in the *Information Type Item* IE indicates a type of information that cannot be provided, the Node B shall regard the Information Exchange Initiation procedure as failed.

If the requested information provision cannot be initiated, the Node B shall send the INFORMATION EXCHANGE INITIATION FAILURE message over the Node B control port. The message shall include the same Information Exchange ID that was used in the INFORMATION EXCHANGE INITIATION REQUEST message and the *Cause* IE set to an appropriate value.

Typical cause values are as follows:

**Radio Network Layer Cause**

- Information temporarily not available.
- Information Provision not supported for the object.

### 8.2.26.4 Abnormal Conditions

If the *Information Report Characteristics* IE is set to "On Modification", and the *Information Type Item* IE is set to "DGPS Corrections", but the *Information Threshold* IE is not received in the INFORMATION EXCHANGE INITIATION REQUEST message, the Node B shall regard the Information Exchange Initiation procedure as failed.

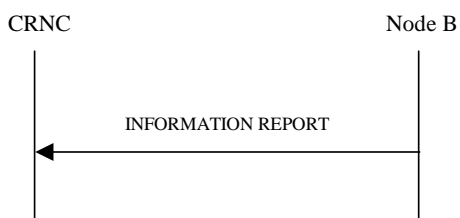
If the *Information Type Item* IE is not set to "DGPS Correction", the *Information Report Characteristics* IE is set to "On Modification" and the *Information Threshold* IE is included in the INFORMATION EXCHANGE INITIATION REQUEST message, the Node B shall regard the Information Exchange Initiation procedure as failed.

## 8.2.27 Information Reporting

### 8.2.27.1 General

This procedure is used by a Node B to report the information requested by the CRNC with the Information Exchange Initiation procedure.

### 8.2.27.2 Successful Operation



**Figure 27N: Information Reporting procedure, Successful Operation**

If the requested information reporting criteria are met, the Node B shall initiate the Information Reporting procedure. The INFORMATION REPORT message shall use the Node B Control Port. Unless specified below, the meaning of the parameters are given in other specifications.

The *Information Exchange ID* IE shall be set to the Information Exchange ID provided by the CRNC when initiating the Information Exchange with the Information Exchange Initiation procedure.

The *Requested Data Value* IE shall include at least one IE containing the data to be reported.

### 8.2.27.3 Abnormal Conditions

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## 8.2.28 Information Exchange Termination

### 8.2.28.1 General

This procedure is used by the CRNC to terminate the provision of information previously requested by the Information Exchange Initiation procedure.

### 8.2.28.2 Successful Operation



**Figure 27O: Information Exchange Termination procedure, Successful Operation**

This procedure is initiated with an INFORMATION EXCHANGE TERMINATION REQUEST message sent from the CRNC to the Node B using the Node B Control Port.

Upon reception, the Node B shall terminate the provision of information corresponding to the Information Exchange ID.

### 8.2.28.3 Abnormal Conditions

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## 8.2.29 Information Exchange Failure

### 8.2.29.1 General

This procedure is used by the Node B to notify the CRNC that information previously requested by the Information Exchange Initiation procedure can no longer be reported.

### 8.2.29.2 Successful Operation



**Figure 27P: Information Exchange Failure procedure, Successful Operation**

This procedure is initiated with the INFORMATION EXCHANGE FAILURE INDICATION message sent from the Node B to the CRNC using the Node B Control Port to inform the CRNC that information previously requested by the Information Exchange Initiation procedure can no longer be reported. The message shall include the same Information Exchange ID that was used in the INFORMATION EXCHANGE INITIATION REQUEST message and the *Cause IE* set to an appropriate value.

## 8.3 NBAP Dedicated Procedures

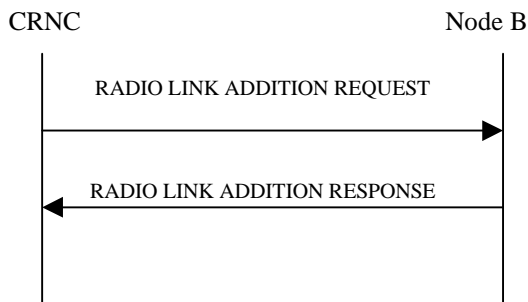
### 8.3.1 Radio Link Addition

#### 8.3.1.1 General

This procedure is used for establishing the necessary resources in the Node B for one or more additional RLS towards a UE when there is already a Node B Communication Context for this UE in the Node B.

The Radio Link Addition procedure shall not be initiated if a Prepared Reconfiguration exists, as defined in subclause 3.1.

## 8.3.1.2 Successful Operation



**Figure: 28 Radio Link Addition procedure, Successful Operation**

The procedure is initiated with a RADIO LINK ADDITION REQUEST message sent from the CRNC to the Node B using the Communication Control Port assigned to the concerned Node B Communication Context.

Upon reception, the Node B shall reserve the necessary resources and configure the new RL(s) according to the parameters given in the message. Unless specified below, the meaning of parameters is specified in other specifications.

The Node B shall prioritise resource allocation for the RL(s) to be established according to Annex A.

**Physical Channels Handling:**

[TDD – If the [3.84Mcps TDD - *UL DPCH Information IE*] [1.28Mcps TDD - *UL DPCH Information LCR IE*] is present, the Node B shall configure the new UL DPCH(s) according to the parameters given in the message.]

[TDD – If the [3.84Mcps TDD - *DL DPCH Information IE*] [1.28Mcps TDD - *DL DPCH Information LCR IE*] is present, the Node B shall configure the new DL DPCH(s) according to the parameters given in the message.]

**[FDD – Compressed Mode]:**

[FDD – If the RADIO LINK ADDITION REQUEST message includes the *Compressed Mode Deactivation Flag IE* with value "Deactivate", the Node B shall not activate any compressed mode pattern in the new RLs. In all the other cases (Flag set to "Maintain Active" or not present), the ongoing compressed mode (if existing) shall be applied also to the added RLs.]

[FDD- If the RADIO LINK ADDITION REQUEST message contains the *Transmission Gap Pattern Sequence Code Information IE* for any of the allocated DL Channelisation Codes, the Node B shall apply the alternate scrambling code as indicated for each DL Channelisation Code for which the *Transmission Gap Pattern Sequence Code Information IE* is set to "Code Change".]

**[FDD – DL Code Information]:**

[FDD – When more than one DL DPDCH are assigned per RL, the segmented physical channel shall be mapped on to DL DPDCHs according to ref. [8]. When  $p$  number of DL DPDCHs are assigned to each RL, the first pair of DL Scrambling Code and FDD DL Channelisation Code Number corresponds to "*PhCH number 1*", the second to "*PhCH number 2*", and so on until the  $p$ th to "*PhCH number p*".]

**[TDD – CCTrCH Handling]:**

[TDD – If the *UL CCTrCH Information IE* is present, the Node B shall configure the new UL CCTrCH(s) according to the parameters given in the message.]

[1.28Mcps TDD - If the *UL CCTrCH Information IE* includes the *TDD TPC UL Step Size IE*, the Node B shall configure the uplink TPC step size according to the parameters given in the message, otherwise it shall use the step size configured in other radio link.]

[TDD – If the *DL CCTrCH Information IE* is present, the Node B shall configure the new DL CCTrCH(s) according to the parameters given in the message.]

[TDD - If the *DL CCTrCH Information* IE includes the *TDD TPC DL Step Size* IE, the Node B shall configure the downlink TPC step size according to the parameters given in the message, otherwise it shall use the step size configured in other radio link.]

**[FDD – Phase Reference Handling]:**

[FDD – If the RADIO LINK ADDITION REQUEST message includes the *Primary CPICH Usage For Channel Estimation* IE and has the value "Primary CPICH shall not be used", the Node B shall assume that the UE is not using the Primary CPICH for channel estimation. If the RADIO LINK ADDITION REQUEST message does not include the *Primary CPICH Usage For Channel Estimation* IE or includes the *Primary CPICH Usage For Channel Estimation* IE and has the value "Primary CPICH may be used", the Node B shall assume that the UE may use the Primary CPICH for channel estimation.]

**Radio Link Handling:**

**Diversity Combination Control:**

The *Diversity Control Field* IE indicates for each RL whether the Node B shall combine the new RL with existing RL(s) or not.

- If the *Diversity Control Field* IE is set to "May", the Node B shall decide for any of the alternatives.
- If the *Diversity Control Field* IE is set to "Must", the Node B shall combine the RL with one of the other - RL.
- If the *Diversity Control Field* IE is set to "Must not", the Node B shall not combine the RL with any other existing RL.

[\[FDD - The \*Diversity Control Field\* IE is only applicable for DCHs, in case of E-DCH it shall always be assumed to be set to "Must".\]](#)

When a new RL is to be combined, the Node B shall choose which RL(s) to combine it with.

In the case of not combining a RL with a RL established with a previous Radio Link Setup or Radio Link Addition Procedure or a RL previously listed in the RADIO LINK ADDITION RESPONSE message, the Node B shall indicate with the Diversity Indication in the *RL Information Response* IE in the RADIO LINK ADDITION RESPONSE message that no combining is done. In this case, the Node B shall include in the *DCH Information Response* IE both the *Transport Layer Address* IE and the *Binding ID* IE for the transport bearer to be established for each DCH of the RL in the RADIO LINK ADDITION RESPONSE message.

In the case of combining with a RL established with a previous Radio Link Setup or Radio Link Addition Procedure or with a RL previously listed in this RADIO LINK ADDITION RESPONSE message, the Node B shall indicate with the Diversity Indication in the *RL Information Response* IE in the RADIO LINK ADDITION RESPONSE message that the RL is combined. In this case, the *RL ID* IE indicates (one of) the previously established RL(s) or a RL previously listed in this RADIO LINK ADDITION RESPONSE message with which the new RL is combined.

In the case of a set of co-ordinated DCHs, the *Binding ID* IE and the *Transport Layer Address* IE shall be included for only one of the DCHs in a set of coordinated DCHs.

[TDD – The Node B shall include in the RADIO LINK ADDITION RESPONSE message both the *Transport Layer Address* IE and the *Binding ID* IE for the transport bearer to be established for each DSCH and USCH.]

**[FDD – Transmit Diversity]:**

[FDD – If the *Transmit Diversity Indicator* IE is included in the RADIO LINK ADDITION REQUEST message, the Node B shall activate/deactivate the Transmit Diversity for each new Radio Link in accordance with the *Transmit Diversity Indicator* IE and the already known diversity mode.]

**DL Power Control:**

[FDD – If the RADIO LINK ADDITION REQUEST message includes the *Initial DL Transmission Power* IE, the Node B shall apply the given power to the transmission on each DL DPCH of the RL when starting transmission until either UL synchronisation on the Uu interface is achieved for the RLS or Power Balancing



is activated. If no *Initial DL Transmission Power IE* is included, the Node B shall use any transmission power level currently used on already existing RLS for this Node B Communication Context. No inner loop power control or balancing shall be performed during this period. The DL power shall then vary according to the inner loop power control (see ref.[10], subclause 5.2.1.2) with DPC MODE currently configured for the relevant Node B Communication Context and the downlink power control procedure (see subclause 8.3.7).]

[3.84 Mcps TDD – If the RADIO LINK ADDITION REQUEST message includes the *Initial DL Transmission Power IE*, the Node B shall determine the initial CCTrCH DL power for each DCH type CCTrCH by the following rule: If the *CCTrCH Initial DL Transmission Power IE* is included for that CCTrCH, then the Node B shall use that power for the initial CCTrCH DL power, otherwise the initial CCTrCH DL power is the *Initial DL Transmission Power IE* included in the *RL Information IE*. The Node B shall apply the given power to the transmission on each DL DPCH and on each Time Slot of the CCTrCH when starting transmission until the UL synchronisation on the Uu interface is achieved for the CCTrCH. If no *Initial DL Transmission Power IE* is included (even if *CCTrCH Initial DL Transmission Power IEs* are included), the Node B shall use any transmission power level currently used on already existing CCTrCHs for this Node B Communication Context. No inner loop power control shall be performed during this period. The DL power shall then vary according to the inner loop power control (see ref.[21], subclause 4.2.3.4).]

[1.28 Mcps TDD - If the RADIO LINK ADDITION REQUEST message includes the *Initial DL Transmission Power IE*, the Node B shall determine the initial DL power for each timeslot within a DCH type CCTrCH by the following rule: If the *Initial DL Transmission Power IE* is included in the *DL Timeslot Information LCR IE*, then the Node B shall use that power for the initial DL power and ignore the *DL Time Slot ISCP info LCR*, otherwise the initial DL power is the *Initial DL Transmission Power IE* included in the *RL Information IE* and if *DL Time Slot ISCP info LCR IE* is present, the Node B shall use the indicated value when deciding the initial DL TX Power for each timeslot as specified in [21], it shall reduce the DL TX power in those downlink timeslots of the radio link where the interference is low, and increase the DL TX power in those timeslots where the interference is high, while keeping the total downlink power in the radio link unchanged. The Node B shall apply the given power to the transmission on each DL DPCH and on each Time Slot of the CCTrCH when starting transmission until the UL synchronisation on the Uu interface is achieved for the CCTrCH. If no *Initial DL Transmission Power IE* is included, the Node B shall use any transmission power level currently used on already existing RL/timeslots for this Node B Communication Context. No inner loop power control shall be performed during this period. The DL power shall then vary according to the inner loop power control (see ref.[21], subclause 5.1.2.4).]

[FDD - If the RADIO LINK ADDITION REQUEST message includes the *Maximum DL Power IE*, the Node B shall store this value and not transmit with a higher power on any DL DPCH of the RL. If no *Maximum DL Power IE* is included, any Maximum DL power stored for already existing RLS for this Node B Communication Context shall be applied. During compressed mode, the  $\delta P_{curr}$ , as described in ref.[10] subclause 5.2.1.3, shall be added to the maximum DL power for the associated compressed frame.]

[FDD - If the RADIO LINK ADDITION REQUEST message includes the *Minimum DL Power IE*, the Node B shall store this value and never transmit with a lower power on any DL DPCH of the RL. If no *Minimum DL Power IE* is included, any Minimum DL power stored for already existing RLS for this Node B Communication Context shall be applied.]

[3.84 Mcps TDD - If the RADIO LINK ADDITION REQUEST message includes the *Maximum DL Power IE*, the Node B shall determine the maximum CCTrCH DL power for each DCH type CCTrCH by the following rule: If the *CCTrCH Maximum DL Transmission Power IE* is included for that CCTrCH, then the Node B shall use that power for the maximum CCTrCH DL power, otherwise the maximum CCTrCH DL power is the *Maximum DL Power IE* included in the *RL Information IE*. If no *Maximum DL Power IE* is included (even if *CCTrCH Maximum DL Transmission Power IEs* are included), any maximum DL power stored for already existing DCH type CCTrCHs for this Node B Communication Context shall be applied.]

[3.84 Mcps TDD - If the RADIO LINK ADDITION REQUEST message includes the *Minimum DL Power IE*, the Node B shall determine the minimum CCTrCH DL power for each DCH type CCTrCH by the following rule: If the *CCTrCH Minimum DL Transmission Power IE* is included for that CCTrCH, then the Node B shall use that power for the minimum CCTrCH DL power, otherwise the minimum CCTrCH DL power is the *Minimum DL Power IE* included in the *RL Information IE*. If no *Minimum DL Power IE* is included (even if *CCTrCH Minimum DL Transmission Power IEs* are included), any minimum DL power stored for already existing DCH type CCTrCHs for this Node B Communication Context shall be applied.]

[1.28 Mcps TDD - If the RADIO LINK ADDITION REQUEST message includes the *Maximum DL Power IE*, the Node B shall determine the maximum DL power for each timeslot within a DCH type CCTrCH by the

following rule: If the *Maximum DL Power* IE is included in the *DL Timeslot Information LCR* IE for that timeslot, then the Node B shall use that power for the maximum DL power, otherwise the maximum DL power is the *Maximum DL Power* IE included in the *RL Information* IE. The Node B shall store this value and not transmit with a higher power on any applicable DL DPCH. If no *Maximum DL Power* IE is included, any maximum DL power stored for already existing RL/timeslots for this Node B Communication Context shall be applied.]

[1.28 Mcps TDD - If the RADIO LINK ADDITION REQUEST message includes the *Minimum DL Power* IE, the Node B shall determine the minimum DL power for each timeslot within a DCH type CcTrCH by the following rule: If the *Minimum DL Power* IE is included in the *DL Timeslot Information LCR* IE for that timeslot, then the Node B shall use that power for the minimum DL power, otherwise the minimum DL power is the *Minimum DL Power* IE included in the *RL Information* IE. The Node B shall store this value and not transmit with a lower power on any applicable DL DPCH. If no *Minimum DL Power* IE is included, any minimum DL power stored for already existing RL/timeslots for this Node B Communication Context shall be applied.]

[3.84Mcps TDD - The initial power, maximum power, and minimum power for DSCH type CcTrCH shall be determined as follows:

- If the DSCH type CcTrCH is paired with an uplink CcTrCH(s) for inner loop power control, the minimum, maximum and initial power for each PDSCH is determined in the same way as described above for DCH type CcTrCHs.
- If the DSCH type CcTrCH is not paired with an uplink CcTrCH(s) for inner loop power control, the PDSCH transmission power is DSCH Data Frame Protocol signalled [24], with the maximum value determined in the same way as described above for DCH type CcTrCHs. The minimum and initial powers, however, are subject to control by the CRNC via the frame protocol].

[1.28 Mcps TDD – If the RADIO LINK ADDITION REQUEST message includes the *Initial DL Transmission Power* IE, the Node B shall determine the initial DL power for each timeslot within a DSCH type CcTrCH by the following rule: If both the *CcTrCH Initial DL Transmission Power* IE, included in the *DL CcTrCH Information* IE, and the *DL Time Slot ISCP Info LCR* IE, included in the *RL Information* IE, are included then the Node B shall use that power for the PDSCH and ignore the *Initial DL Transmission Power* IE included in the *RL Information* IE, otherwise the initial DL Power is the *Initial DL Transmission Power* IE included in the *RL Information* IE and if *DL Time Slot ISCP info LCR* IE is present, the Node B shall use the indicated value when deciding the initial DL TX Power for each timeslot as specified in [21], it shall reduce the DL TX power in those downlink timeslots of the radio link where the interference is low, and increase the DL TX power in those timeslots where the interference is high, while keeping the total downlink power in the radio link unchanged. The Node B shall apply the given power to the transmission on each DL PDSCH and on each Time Slot of the CcTrCH when starting transmission until the UL synchronisation on the Uu interface is achieved for the CcTrCH. If no *Initial DL Transmission Power* IE is included, the Node B shall use any transmission power level currently used on already existing RL/timeslots for this Node B Communication Context. No inner loop power control shall be performed during this period. The DL power shall then vary according to the inner loop power control (see ref.[21], subclause 5.1.2.4).]

[1.28 Mcps TDD - If the RADIO LINK ADDITION REQUEST message includes the *Maximum DL Power* IE, the Node B shall determine the maximum DL power for each timeslot within a DSCH type CcTrCH by the following rule: If the *CcTrCH Maximum DL Transmission Power* IE, included in the *DL CcTrCH Information* IE, is included then the Node B shall use that power for the maximum DL power, otherwise the maximum DL power is the *Maximum DL Power* IE included in the *RL Information* IE. The Node B shall store this value and not transmit with a higher power on any applicable PDSCH. If no *Maximum DL Power* IE is included, any maximum DL power stored for already existing RL/timeslots for this Node B Communication Context shall be applied.]

[1.28 Mcps TDD - If the RADIO LINK ADDITION REQUEST message includes the *Minimum DL Power* IE, the Node B shall determine the minimum DL power for each timeslot within a DSCH type CcTrCH by the following rule: If the *CcTrCH Minimum DL Transmission Power* IE, included in the *DL CcTrCH Information* IE, is included then the Node B shall use that power for the minimum DL power, otherwise the minimum DL power is the *Minimum DL Power* IE included in the *RL Information* IE. The Node B shall store this value and not transmit with a lower power on any applicable PDSCH. If no *Minimum DL Power* IE is included, any minimum DL power stored for already existing RL/timeslots for this Node B Communication Context shall be applied.]

[3.84Mcps TDD – If the RADIO LINK ADDITION REQUEST message includes the *DL Time Slot ISCP Info* IE, the Node B shall use the indicated value when deciding the DL TX Power for each timeslot as specified in ref. [21], i.e. it shall reduce the DL TX power in those downlink timeslots of the radio link where the interference is low, and increase the DL TX power in those timeslots where the interference is high, while keeping the total downlink power in the radio link unchanged].

[FDD – If the power balancing is active with the Power Balancing Adjustment Type of the Node B Communication Context set to "Individual" in the existing RL(s) and the RADIO LINK ADDITION REQUEST message includes the *DL Reference Power* IE, the Node B shall activate the power balancing and use the *DL Reference Power* IE for the power balancing procedure in the new RL(s), if activation of power balancing by the RADIO LINK ADDITION REQUEST message is supported, according to subclause 8.3.7. In this case, the Node B shall include the *DL Power Balancing Activation Indicator* IE in the *RL Information Response* IE in the RADIO LINK ADDITION RESPONSE message. If the Node B starts the DL transmission and the activation of the power balancing at the same CFN, the initial power of the power balancing, i.e.  $P_{init}$  shall be set to the power level indicated by the *Initial DL Transmission Power* IE (if received) or the decided DL TX power level on each DL channelisation code of a RL based on power level of existing RLs.]

#### [1.28Mcps TDD – Uplink Synchronisation Parameters LCR]:

[1.28Mcps TDD - If the RADIO LINK ADDITION REQUEST message contains the *Uplink Synchronisation Parameters LCR* IE, the Node B shall use the indicated values of *Uplink Synchronisation Step Size* IE and *Uplink Synchronisation Frequency* IE when evaluating the timing of the UL synchronisation.]

#### General:

If the RADIO LINK ADDITION REQUEST message includes the *RL Specific DCH Information* IE, the Node B may use the transport layer address and the binding identifier received from the CRNC when establishing a transport bearer for the DCH or the set of co-ordinated DCHs.

[FDD – If the RADIO LINK ADDITION REQUEST message contains an *SSDT Cell Identity* IE, the Node B shall activate SSDT, if supported, for the concerned new RL, with the indicated SSDT cell identity used for that RL.]

[FDD – If the RADIO LINK ADDITION REQUEST message includes the *Qth Parameter* IE in addition to the *SSDT Cell Identity* IE, the Node B shall use the *Qth Parameter* IE, if Qth signalling is supported, when SSDT is activated in the concerned new RL.]

The Node B shall start reception on the new RL(s) after the RLs are successfully established.

#### [FDD – Radio Link Set Handling]:

[FDD – For each RL not having a common generation of the TPC commands in the DL with another RL, the Node B shall assign the *RL Set ID* IE included in the RADIO LINK ADDITION RESPONSE message a value that uniquely identifies the RL Set within the Node B Communication Context.]

[FDD – For all RLs having a common generation of the TPC commands in the DL with another new or existing RL, the Node B shall assign the *RL Set ID* IE included in the RADIO LINK ADDITION RESPONSE message the same value. This value shall uniquely identify the RL Set within the Node B Communication Context.]

[FDD – After addition of the new RL(s), the UL out-of-sync algorithm defined in [10] shall, for each of the previously existing and newly established RL Set(s), use the maximum value of the parameters  $N_{OUTSYNC\_IND}$  and  $T_{RLFAILURE}$  that are configured in the cells supporting the radio links of the RL Set. The UL in-sync algorithm defined in [10] shall, for each of the established RL Set(s), use the minimum value of the parameters  $N_{INSYNC\_IND}$ , that are configured in the cells supporting the radio links of the RL Set.]

#### [FDD - E-DCH]:

If the RADIO LINK ADDITION REQUEST message contains the E-DCH RL Indication IE in the RL Information IE, then for every such RL:

- The Node B shall setup the E-DCH resources as configured in the Node B Communication Context.

- The Node B shall include the *E-AGCH* And *E-RGCH/E-HICH FDD Scrambling Code IE*, the *E-RGCH/E-HICH Channelisation Code IE* and the corresponding *Sequence Number IEs* in the *E-DCH FDD DL Control Channel Information IE* in the RADIO LINK ADDITION RESPONSE message.]

### Response Message:

If all requested RLs are successfully added, the Node B shall respond with a RADIO LINK ADDITION RESPONSE message.

After sending the RADIO LINK ADDITION RESPONSE message, the Node B shall continuously attempt to obtain UL synchronisation on the Uu interface.

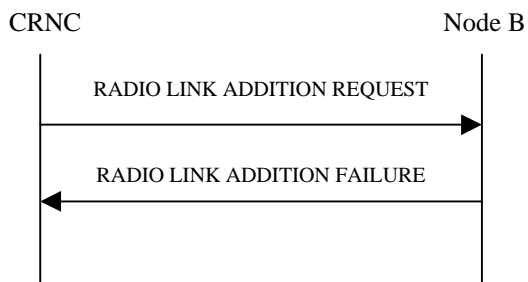
For each RL for which the *Delayed Activation IE* is not included in the RADIO LINK ADDITION REQUEST message, the Node B shall:

- [FDD - start transmission on the DL DPDCH(s) of the new RL as specified in [16].]
- [TDD - start transmission on the new RL immediately as specified in [16].]

For each RL for which the *Delayed Activation IE* is included in the RADIO LINK ADDITION REQUEST message, the Node B shall:

- if the *Delayed Activation IE* indicates "Separate Indication":
  - not start any DL transmission for the concerned RL on the Uu interface;
- if the *Delayed Activation IE* indicates "CFN":
  - [FDD – start transmission on the DL DPDCH(s) of the new RL as specified in [16], however never before the CFN indicated in the *Activation CFN IE*.]
  - [TDD – start transmission on the new RL at the CFN indicated in the *Activation CFN IE* as specified in [16].]

### 8.3.1.3 Unsuccessful Operation



**Figure 29: Radio Link Addition procedure: Unsuccessful Operation**

If the establishment of at least one radio link is unsuccessful, the Node B shall respond with a RADIO LINK ADDITION FAILURE message. The message contains the failure cause in the *Cause IE*.

[FDD - If some RL(s) were established successfully, the Node B shall indicate this in the RADIO LINK ADDITION FAILURE message in the same way as in the RADIO LINK ADDITION RESPONSE message.]

[FDD – If the RADIO LINK ADDITION REQUEST contains a *C-ID IE* indicating that a Radio Link must be established on a Cell where DPC Mode change is not supported and DPC Mode can be changed for the relevant Node B Communication Context, the Node B shall consider the procedure as failed for the concerned Radio Link and shall respond with a RADIO LINK ADDITION FAILURE with the appropriate cause value ("DPC Mode change not supported").]

Typical cause values are as follows:

**Radio Network Layer Cause**

- Combining not supported
- Combining Resources not available
- Requested Tx Diversity Mode not supported
- UL SF not supported
- DL SF not supported
- Reconfiguration CFN not elapsed
- CM not supported
- [FDD – DPC Mode change not supported]
- Delayed Activation not supported

**Transport Layer Cause**

- Transport Resources Unavailable

**Miscellaneous Cause**

- O&M Intervention
- Control processing overload
- HW failure

**8.3.1.4 Abnormal conditions**

[FDD – If the RADIO LINK ADDITION REQUEST message contains the *Compressed Mode Deactivation Flag* IE with the value "Deactivate" when compressed mode is active for the existing RL(s), and at least one of the new RL is added in a cell that has the same UARFCN (both UL and DL) of at least one cell with an already existing RL, the Node B shall regard the Radio Link Addition procedure as failed and shall respond with a RADIO LINK ADDITION FAILURE message with the cause value "Invalid CM settings".]

[FDD – If the power balancing is active with the Power Balancing Adjustment Type of the Node B Communication Context set to "Individual" in the existing RL(s) and if the *DL Reference Power* IEs are included in the *RL Information* IE but the *DL Reference Power* IE is not present for each RL in the *RL Information* IE, the Node B shall regard the Radio Link Addition procedure as failed and shall respond with a RADIO LINK ADDITION FAILURE message.]

[FDD – If the RADIO LINK ADDITION REQUEST message includes the *DL Reference Power* IEs in the *RL Information* IE but the power balancing is not active in the existing RL(s) or the power balancing is active with the Power Balancing Adjustment Type of the Node B Communication Context set to "Common" in the existing RL(s), the Node B shall regard the Radio Link Addition procedure as failed and shall respond with a RADIO LINK ADDITION FAILURE message with the cause value "Power Balancing status not compatible".]

If the RADIO LINK ADDITION REQUEST message includes the *Transport Layer Address* IE and the *Binding ID* IE in the *RL Specific DCH Information* IE included in the *RL Information* IE for a specific RL and the *Diversity Control Field* IE is set to "Must", the Node B shall regard the Radio Link Addition procedure as failed and respond with the RADIO LINK ADDITION FAILURE message.

If the RADIO LINK ADDITION REQUEST message contains the *Transport Layer Address* IE or the *Binding ID* IE, and not both are present for a transport bearer intended to be established, the Node B shall reject the procedure using the RADIO LINK ADDITION FAILURE message.

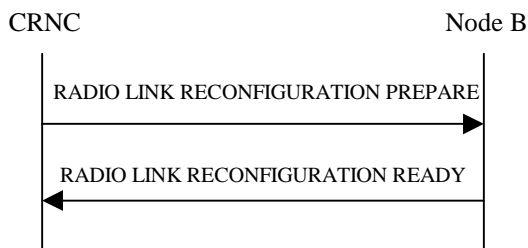
## 8.3.2 Synchronised Radio Link Reconfiguration Preparation

### 8.3.2.1 General

The Synchronised Radio Link Reconfiguration Preparation procedure is used to prepare a new configuration of Radio Link(s) related to one Node B Communication Context.

The Synchronised Radio Link Reconfiguration Preparation procedure shall not be initiated if a Prepared Reconfiguration exists, as defined in subclause 3.1.

### 8.3.2.2 Successful Operation



**Figure 30: Synchronised Radio Link Reconfiguration Preparation procedure, Successful Operation**

The Synchronised Radio Link Reconfiguration Preparation procedure is initiated by the CRNC by sending the RADIO LINK RECONFIGURATION PREPARE message to the Node B. The message shall use the Communication Control Port assigned for this Node B Communication Context.

Upon reception, the Node B shall reserve necessary resources for the new configuration of the Radio Link(s) according to the parameters given in the message. Unless specified below, the meaning of parameters is specified in other specifications.

The Node B shall prioritise resource allocation for the RL(s) to be modified according to Annex A.

#### **DCH Modification:**

If the RADIO LINK RECONFIGURATION PREPARE message includes any *DCHs To Modify* IE then the Node B shall treat them each as follows:

- If the *DCHs To Modify* IE includes the *Frame Handling Priority* IE, the Node B should store this information for this DCH in the new configuration. The received Frame Handling Priority should be used when prioritising between different frames in the downlink on the radio interface in congestion situations within the Node B once the new configuration has been activated.
- If the *DCHs To Modify* IE includes the *Transport Format Set* IE for the UL of a DCH, the Node B shall apply the new Transport Format Set in the Uplink of this DCH in the new configuration.
- If the *DCHs To Modify* IE includes the *TNL QoS* IE for a DCH or a set of co-ordinated DCHs to be modified and if ALCAP is not used, the Node B may store this information for this DCH in the new configuration. The *TNL QoS* IE may be used to determine the transport bearer characteristics to apply in the uplink for the related DCH or set of co-ordinated DCHs.
- If the *DCHs To Modify* IE includes the *Transport Format Set* IE for the DL of a DCH, the Node B shall apply the new Transport Format Set in the Downlink of this DCH in the new configuration.
- If the *DCHs To Modify* IE includes the *Allocation/Retention Priority* IE for a DCH, the Node B shall apply the new Allocation/Retention Priority to this DCH in the new configuration according to Annex A.
- If the *DCHs To Modify* IE includes multiple *DCH Specific Info* IEs, the Node B shall treat the DCHs in the *DCHs to Modify* IE as a set of co-ordinated DCHs. The Node B shall include these DCHs in the new configuration only if it can include all of them in the new configuration.

- If the *DCHs To Modify* IE includes the *UL FP Mode* IE for a DCH or a DCH which belongs to a set of co-ordinated DCHs, the Node B shall apply the new FP Mode in the Uplink of the user plane for the DCH or the set of co-ordinated DCHs in the new configuration.
- If the *DCHs To Modify* IE includes the *ToAWS* IE for a DCH or a DCH which belongs to a set of co-ordinated DCHs, the Node B shall apply the new ToAWS in the user plane for the DCH or the set of co-ordinated DCHs in the new configuration.
- If the *DCHs To Modify* IE includes the *ToAWE* IE for a DCH or a DCH which belongs to a set of co-ordinated DCHs, the Node B shall apply the new ToAWE in the user plane for the DCH or the set of co-ordinated DCHs in the new configuration.
- [TDD – If the *DCHs To Modify* IE includes the *CCTrCH ID* IE for the DL of a DCH to be modified, the Node B shall apply the new CCTrCH ID in the Downlink of this DCH in the new configuration.]
- [TDD – If the *DCHs To Modify* IE includes the *CCTrCH ID* IE for the UL of a DCH to be modified, the Node B shall apply the new CCTrCH ID in the Uplink of this DCH in the new configuration.]

#### DCH Addition:

If the RADIO LINK RECONFIGURATION PREPARE message includes any *DCHs To Add* IEs then the Node B shall treat them each as follows:

- If the *DCHs To Add* IE includes multiple *DCH Specific Info* IEs, the Node B shall treat the DCHs in the *DCHs To Add* IE as a set of co-ordinated DCHs. The Node B shall include these DCHs in the new configuration only if it can include all of them in the new configuration.
- If the *DCH Specific Info* IE includes the *Unidirectional DCH Indicator* IE set to "Uplink DCH only", the Node B shall ignore the *Transport Format Set* IE for the downlink for this DCH. As a consequence this DCH is not included as a part of the downlink CCTrCH.
- [TDD – If the *DCH Specific Info* IE includes the *Unidirectional DCH Indicator* IE set to "Downlink DCH only", the Node B shall ignore the *Transport Format Set* IE for the uplink for this DCH. As a consequence this DCH is not included as a part of the uplink CCTrCH.]
- [FDD – For DCHs which do not belong to a set of co-ordinated DCHs with the *QE-Selector* IE set to "selected", the Transport channel BER from that DCH shall be the base for the QE in the UL data frames. If no Transport channel BER is available for the selected DCH, the Physical channel BER shall be used for the QE, ref. [16]. If the *QE-Selector* IE is set to "non-selected", the Physical channel BER shall be used for the QE in the UL data frames, ref. [16].]
- For a set of co-ordinated DCHs, the Transport channel BER from the DCH with the *QE-Selector* IE set to "selected" shall be used for the QE in the UL data frames, ref. [16]. [FDD – If no Transport channel BER is available for the selected DCH, the Physical channel BER shall be used for the QE, ref. [16]. If all DCHs have the *QE-Selector* IE set to "non-selected", the Physical channel BER shall be used for the QE, ref. [16].]
- The Node B should store the *Frame Handling Priority* IE received for a DCH to be added in the new configuration. The received Frame Handling Priority should be used when prioritising between different frames in the downlink on the Uu interface in congestion situations within the Node B once the new configuration has been activated.
- If the *TNL QoS* IE is included for a DCH or a set of co-ordinated DCHs and if ALCAP is not used, the Node B may store this information for this DCH in the new configuration. The *TNL QoS* IE may be used to determine the transport bearer characteristics to apply for the uplink between the Node B and the CRNC for the related DCH or set of co-ordinated DCHs.
- The Node B shall use the included *UL FP Mode* IE for a DCH or a set of co-ordinated DCHs to be added as the new FP Mode in the Uplink of the user plane for the DCH or the set of co-ordinated DCHs in the new configuration.
- The Node B shall use the included *ToAWS* IE for a DCH or a set of co-ordinated DCHs to be added as the new Time of Arrival Window Startpoint in the user plane for the DCH or the set of co-ordinated DCHs in the new configuration.

- The Node B shall use the included *ToAWE* IE for a DCH or a set of co-ordinated DCHs to be added as the new Time of Arrival Window Endpoint in the user plane for the DCH or the set of co-ordinated DCHs in the new configuration.
- [TDD – The Node B shall apply the *CCTrCH ID* IE (for the DL) in the Downlink of this DCH in the new configuration.]
- [TDD – The Node B shall apply the *CCTrCH ID* IE (for the UL) in the Uplink of this DCH in the new configuration.]

#### **DCH Deletion:**

If the RADIO LINK RECONFIGURATION PREPARE message includes any *DCHs To Delete* IE, the Node B shall not include the referenced DCHs in the new configuration.

If all of the DCHs belonging to a set of co-ordinated DCHs are requested to be deleted, the Node B shall not include this set of co-ordinated DCHs in the new configuration.

#### **Physical Channel Modification:**

[FDD – If the RADIO LINK RECONFIGURATION PREPARE message includes an *UL DPCH Information* IE, then the Node B shall apply the parameters to the new configuration as follows:]

- [FDD - If the *UL DPCH Information* IE includes the *Uplink Scrambling Code* IE, the Node B shall apply this Uplink Scrambling Code to the new configuration.]
- [FDD - If the *UL DPCH Information* IE includes the *Min UL Channelisation Code Length* IE, the Node B shall apply the value in the new configuration. The Node B shall apply the contents of the *Max Number of UL DPDCHs* IE (if it is included) in the new configuration.]
- [FDD - If the *UL DPCH Information* IE includes the *UL SIR Target* IE, the Node B shall use the value for the UL inner loop power control when the new configuration is being used.]
- [FDD - If the *UL DPCH Information* IE includes the *Puncture Limit* IE, the Node B shall apply the value in the uplink of the new configuration.]
- [FDD - The Node B shall use the *TFCS* IE for the UL (if present) when reserving resources for the uplink of the new configuration. The Node B shall apply the new TFCS in the Uplink of the new configuration.]
- [FDD - If the *UL DPCH Information* IE includes the *UL DPCCH Slot Format* IE, the Node B shall set the new Uplink DPCCH Structure to the new configuration.]
- [FDD - If the *UL DPCH Information* IE includes the *Diversity Mode* IE, the Node B shall apply diversity according to the given value.]
- [FDD - If the *UL DPCH Information* IE includes an *SSDT Cell Identity Length* IE and/or an *S-Field Length* IE, the Node B shall apply the values in the new configuration.]

[FDD - If the RADIO LINK RECONFIGURATION PREPARE message includes a *DL DPCH Information* IE, the Node B shall apply the parameters to the new configuration as follows:]

- [FDD - The Node B shall use the *TFCS* IE for the DL (if it is present) when reserving resources for the downlink of the new configuration. The Node B shall apply the new TFCS in the Downlink of the new configuration.]
- [FDD - If the *DL DPCH Information* IE includes the *TFCI Signalling Mode* IE or the *TFCI Presence* IE, the Node B shall use the information when building TFCIs in the new configuration.]
- [FDD - If the *DL DPCH Information* IE includes the *DL DPCH Slot Format* IE, the Node B shall set the new Downlink DPCH Structure to the new configuration.]
- [FDD - If the *DL DPCH Information* IE includes the *Multiplexing Position* IE, the Node B shall apply the indicated multiplexing type in the new configuration.]
- [FDD - If the *DL DPCH Information* IE includes the *Limited Power Increase* IE set to "Used", the Node B shall, if supported, use Limited Power Increase according to ref. [10] subclause 5.2.1 for the inner loop DL power control in the new configuration.]



- [FDD - If the *DL DPCH Information IE* includes the *Limited Power Increase IE* set to "Not Used", the Node B shall not use Limited Power Increase for the inner loop DL power control in the new configuration.]
- [FDD - If the *DL DPCH Information IE* includes the *PDSCH Code Mapping IE*, then the Node B shall apply the defined mapping between TFCI values and PDSCH channelisation codes.]
- [FDD - If the *DL DPCH Information IE* includes the *PDSCH RL ID IE*, then the Node B shall infer that the PDSCH for the specified user will be transmitted on the defined radio link.]

[FDD – If the RADIO LINK RECONFIGURATION PREPARE message includes the *Transmission Gap Pattern Sequence Information IE*, the Node B shall store the new information about the Transmission Gap Pattern Sequences to be used in the new Compressed Mode Configuration. Any Transmission Gap Pattern Sequences already existing in the previous Compressed Mode Configuration are replaced by the new sequences once the new Compressed Mode Configuration has been activated. This new Compressed Mode Configuration shall be valid in the Node B until the next Compressed Mode Configuration is configured in the Node B or Node B Communication Context is deleted.]

[FDD - E-DPCH Handling: If the *UL DPDCH Indicator For E-DCH Operation IE* is set to "UL DPDCH not present" the *Min UL Channelisation Code Length IE*, the *Puncture Limit IE* and the *TFCS IE*, within the *UL DPCH Information IE* shall be ignored.]

[FDD - If the RADIO LINK RECONFIGURATION PREPARE message includes an *E-DPCH Information IE*, the Node B shall apply the parameters to the new configuration as follows:]

- [FDD - If the *E-DPCH Information IE* includes the *Min UL Channelisation Code Length For EDCH FDD IE*, the Node B shall apply the new Min UL Channelisation Code Length in the new configuration. The Node B shall apply the contents of the *Max Number Of E-DPDCHs IE* (if it is included) in the new configuration.]
- [FDD - If the *E-DPCH Information IE* includes the *Puncture Limit IE*, the Node B shall apply the value in the uplink of the new configuration]
- [FDD - If the *E-DPCH Information IE* includes the *E-TFCS IE*, the Node B shall use the *E-TFCS IE* for the E-DCH when reserving resources for the uplink of the new configuration. The Node B shall apply the new TFCS in the uplink of the new configuration.]
- [FDD - If the *E-DPCH Information IE* includes the *E-TTI IE*, the Node B shall use the value when the new configuration is being used.]

#### **[TDD – UL/DL CCTrCH Modification]**

[TDD – If the RADIO LINK RECONFIGURATION PREPARE message includes any *UL CCTrCH to Modify* or *DL CCTrCH to Modify IE*, then the Node B shall treat them each as follows:]

- [TDD – If the IE includes any of the *TFCS IE*, *TFCI coding IE* or *Puncture Limit IE*, the Node B shall apply these as the new values, otherwise the old values specified for this CCTrCH are still applicable.]
- [TDD – If the IE includes any *UL DPCH To Add IE*, *UL DPCH To Add LCR IE*, *DL DPCH To Add LCR IE*, or *DL DPCH To Add IE*, the Node B shall include this DPCH in the new configuration.]
- [TDD – If the IE includes any *UL DPCH To Delete IE* or *DL DPCH To Delete IE*, the Node B shall remove this DPCH in the new configuration.]
- [TDD – If the IE includes any *UL DPCH To Modify IE* or *DL DPCH To Modify IE* and includes any of the *Repetition Period IE*, *Repetition Length IE* or *TDD DPCH Offset IE*, or the message includes UL/DL Timeslot Information and includes any of the [3.84Mcps TDD - *Midamble Shift And Burst Type IE*], [1.28Mcps TDD - *Midamble Shift LCR IE*], or *TFCI Presence IE* or the message includes UL/DL Code information and includes [3.84Mcps TDD - *TDD Channelisation Code IE*], [1.28Mcps TDD - *TDD Channelisation Code LCR IE*], [1.28Mcps TDD - *TDD UL DPCH Time Slot Format LCR IE* or *TDD DL DPCH Time Slot Format LCR IE*], the Node B shall apply these specified information elements as the new values, otherwise the old values specified for this DPCH configuration are still applicable.]
- [1.28Mcps TDD – If the *UL CCTrCH To Modify IE* includes the *UL SIR Target IE*, the Node B shall use the value for the UL inner loop power control according [19] and [21] when the new configuration is being used.]
- [1.28Mcps TDD - If the *UL CCTrCH to Modify IE* includes the *TDD TPC UL Step Size IE*, the Node B shall apply this value to the uplink TPC step size in the new configuration.]

- [TDD - If the *DL CCTrCH to Modify* IE includes the *TDD TPC DL Step Size* IE, the Node B shall apply this value to the downlink TPC step size in the new configuration.]

#### [TDD – UL/DL CCTrCH Addition]

[TDD – If the RADIO LINK RECONFIGURATION PREPARE message includes any *UL CCTrCH To Add* IE or *DL CCTrCH To Add* IE, the Node B shall include this CCTrCH in the new configuration.]

[TDD – If the *UL/DL CCTrCH To Add* IE includes any [3.84Mcps TDD - *UL/DL DPCH Information* IE] [1.28Mcps TDD - *UL/DL DPCH Information LCR* IE], the Node B shall reserve necessary resources for the new configuration of the UL/DL DPCH(s) according to the parameters given in the message.]

[TDD – If the RADIO LINK RECONFIGURATION PREPARE message includes *TDD TPC DL Step Size* IE within a *DL CCTrCH To Add* IE, the Node B shall set the downlink TPC step size of that CCTrCH to that value, otherwise the Node B shall set the TPC step size of that CCTrCH to the same value as the lowest numbered DL CCTrCH in the current configuration.]

[1.28Mcps TDD - If the *UL CCTrCH To Add* IE includes the *TDD TPC UL Step Size* IE, the Node B shall apply the uplink TPC step size in the new configuration.]

[1.28Mcps TDD –The Node B shall use the *UL SIR Target* IE in the *UL CCTrCH To Add* IE as the UL SIR value for the inner loop power control for this CCTrCH according [19] and [21] in the new configuration.]

#### [TDD – UL/DL CCTrCH Deletion]

[TDD – If the RADIO LINK RECONFIGURATION PREPARE message includes any UL or DL CCTrCH to be deleted , the Node B shall remove this CCTrCH in the new configuration.]

#### DL Power Control:

- [FDD - If the *RL Information* IE includes the *DL Reference Power* IEs and the power balancing is active, the Node B shall update the reference power of the power balancing in the indicated RL(s), if updating of power balancing parameters by the RADIO LINK RECONFIGURATION PREPARE message is supported, at the CFN in the RADIO LINK RECONFIGURATION COMMIT message, according to subclause 8.3.7, using the *DL Reference Power* IE. If the CFN modulo the value of the *Adjustment Period* IE is not equal to 0, the power balancing continues with the old reference power until the end of the current adjustment period, and the updated reference power shall be used from the next adjustment period.]

[FDD - If updating of power balancing parameters by the RADIO LINK RECONFIGURATION PREPARE message is supported by the Node B, the Node B shall include the *DL Power Balancing Updated Indicator* IE in the *RL Information Response* IE for each affected RL in the RADIO LINK RECONFIGURATION READY message.]

#### DSCH Addition/Modification/Deletion:

If the RADIO LINK RECONFIGURATION PREPARE message includes any *DSCH To Add*, *DSCH To Modify* or *DSCH To Delete* IE, then the Node B shall use this information to add/modify/delete the indicated DSCH channels to/from the radio link, in the same way as the DCH info is used to add/modify/release DCHs.

The Node B shall include in the RADIO LINK RECONFIGURATION READY message both the *Transport Layer Address* IE and the *Binding ID* IE for the transport bearer to be established for each DSCH.

[FDD – If the RADIO LINK RECONFIGURATION PREPARE message includes the *TFCI2 Bearer Information* IE, then the Node B shall support the establishment of a transport bearer on which the DSCH TFCI Signaling control frames shall be received if one does not already exist or shall apply the new values if such a bearer does already exist for this Node B Communication Context. The *Binding ID* IE and *Transport Layer Address* IE of any new bearer to be set up for this purpose shall be returned in the RADIO LINK RECONFIGURATION READY message. If the RADIO LINK RECONFIGURATION PREPARE message includes the *Transport Layer Address* IE and *Binding ID* IE in the *TFCI2 Bearer Information* IE the Node B may use the transport layer address and the binding identifier received from the CRNC when establishing a TFCI2 transport bearer. If the RADIO LINK RECONFIGURATION PREPARE message specifies that the TFCI2 transport bearer is to be deleted, then the Node B shall release the resources associated with that bearer in the new configuration.]

[FDD – If the RADIO LINK RECONFIGURATION PREPARE message includes the *TFCI2 Bearer Request Indicator* IE in the *TFCI2 Bearer Information* IE with the value "New Bearer Requested", the Node B shall, if supported, establish a new transport bearer replacing the existing transport bearer on which the DSCH TFCI Signaling control

frames shall be received. The *Binding ID IE* and *Transport Layer Address IE* of a new bearer to be set up for this purpose shall be returned in the RADIO LINK RECONFIGURATION READY message.]

[FDD – If the *TFCI Signalling Mode IE* within the RADIO LINK RECONFIGURATION PREPARE message indicates that there shall be a hard split on the TFCI field but a TFCI2 transport bearer has not already been set up and *TFCI2 Bearer Information IE* is not included in the message, then the Node B shall transmit the TFCI2 field with zero power in the new configuration.]

[FDD – If the *TFCI Signalling Mode IE* within the RADIO LINK RECONFIGURATION PREPARE message indicates that there shall be a hard split on the TFCI and the *TFCI2 Bearer Information IE* is included in the message, then the Node B shall transmit the TFCI2 field with zero power until Synchronisation is achieved on the TFCI2 transport bearer and the first valid DSCH TFCI Signalling control frame is received on this bearer in the new configuration (see ref. [24]).]

[FDD – If the RADIO LINK RECONFIGURATION PREPARE message includes the *Length Of TFCI2 IE*, then the Node B shall apply the length of TFCI (field 2) indicated in the message in the new configuration.]

[FDD – If the RADIO LINK RECONFIGURATION PREPARE message does not include the *Length Of TFCI2 IE* and the *Split Type IE* is present with the value "Hard", then the Node B shall assume the length of the TFCI (field 2) is 5 bits in the new configuration.]

[FDD - If the RADIO LINK RECONFIGURATION PREPARE message includes the *DSCH Common Information IE*, the Node B shall treat it as follows:]

- [FDD - If the *Enhanced DSCH PC Indicator IE* is included and set to "Enhanced DSCH PC Active in the UE ", the Node B shall activate enhanced DSCH power control in accordance with ref. [10] subclause 5.2.2, if supported, using either:]
  - [FDD - the *SSDT Cell Identity for EDSCHPC IE* in the *RL Information IE*, if the *SSDT Cell Identity IE* is not included in the *RL Information IE* or]
  - [FDD - the *SSDT Cell Identity IE* in the *RL Information IE*, if both the *SSDT Cell Identity IE* and the *SSDT Cell Identity for EDSCHPC IE* are included in the *RL Information IE*.]

[FDD - together with the *SSDT Cell Identity Length IE* in *UL DPCH Information IE*, and *Enhanced DSCH PC IE*, in the new configuration.]

[FDD - If the enhanced DSCH power control is activated and the TFCI power control in DSCH hard split mode is supported, the primary/secondary status determination in the enhanced DSCH power control is also applied to the TFCI power control in DSCH hard split mode.]

[FDD - If the RADIO LINK RECONFIGURATION PREPARE message includes the *Enhanced DSCH PC Indicator IE* set to "Enhanced DSCH PC not Active in the UE", the Node B shall deactivate enhanced DSCH power control in the new configuration.]

#### [TDD – USCH Addition/Modification/Deletion]:

- [TDD – If the RADIO LINK RECONFIGURATION PREPARE message includes USCH information for the USCHs to be added/modified/deleted then the Node B shall use this information to add/modify/delete the indicated USCH channels to/from the radio link, in the same way as the DCH info is used to add/modify/release DCHs.]
- [TDD – If the RADIO LINK RECONFIGURATION PREPARE message includes USCH information for the USCHs to be added/modified, if the *TNL QoS IE* is included and if ALCAP is not used, the Node B may use the *TNL QoS IE* to determine the transport bearer characteristics to apply between the Node B and the CRNC for the related USCHs.]
- [TDD – The Node B shall include in the RADIO LINK RECONFIGURATION READY message both the *Transport Layer Address IE* and the *Binding ID IE* for the transport bearer to be established for each USCH.]

#### RL Information:

If the RADIO LINK RECONFIGURATION PREPARE message includes the *RL Information IE*, the Node B shall treat it as follows:

- [FDD – When more than one DL DPDCH are assigned per RL, the segmented physical channel shall be mapped on to DL DPDCHs according to [8]. When  $p$  number of DL DPDCHs are assigned to each RL, the first pair of DL Scrambling Code and FDD DL Channelisation Code Number corresponds to "*PhCH number 1*", the second to "*PhCH number 2*", and so on until the  $p$ th to "*PhCH number p*".]
- [FDD – If the *RL Information IE* includes the *SSDT Indication IE* set to "SSDT Active in the UE", the Node B may activate SSDT using the *SSDT Cell Identity IE* in the new configuration.]
- [FDD – If the *RL Information IE* includes the *Qth Parameter IE* and the *SSDT Indication IE* set to "SSDT Active in the UE", the Node B shall use the *Qth Parameter IE*, if Qth signalling is supported, when SSDT is activated in the new configuration.]
- [FDD – If the *RL Information IE* includes the *SSDT Indication IE* set to "SSDT not Active in the UE", the Node B shall deactivate SSDT in the new configuration.]
- [FDD – If the *RL Information IE* includes a *DL Code Information IE*, the Node B shall apply the values in the new configuration.]
- [FDD – If the *RL Information IE* contains the *Transmission Gap Pattern Sequence Code Information IE* in the *DL Code Information IE* for any of the allocated DL Channelisation Codes, the Node B shall apply the alternate scrambling code as indicated whenever the downlink compressed mode method SF/2 is active in the new configuration.]
- [FDD - If the *RL Information IE* includes the *Maximum DL Power* and/or the *Minimum DL Power* IEs, the Node B shall apply the values in the new configuration. During compressed mode, the  $\delta P_{curr}$ , as described in ref.[10] subclause 5.2.1.3, shall be added to the maximum DL power for the associated compressed frame.]
- [3.84 Mcps TDD - If the *DL CCH To Add IE* is included, the Node B shall determine the maximum CCH DL power for the DCH type CCH by the following rule: If the *CCH Maximum DL Transmission Power IE* is included for that CCH, then the Node B shall use that power for the maximum CCH DL power, otherwise the maximum CCH DL power is the *Maximum Downlink Power IE* included in the *RL Information IE*. If no *Maximum Downlink Power IE* is included (even if *CCH Maximum DL Transmission Power* IEs are included), any maximum DL power stored for already existing DCH type CCHs for this Node B Communication Context shall be applied.]
- [3.84 Mcps TDD - If the *DL CCH To Add IE* is included, the Node B shall determine the minimum CCH DL power for the DCH type CCH by the following rule: If the *CCH Minimum DL Transmission Power IE* is included for that CCH, then the Node B shall use that power for the minimum CCH DL power, otherwise the minimum CCH DL power is the *Minimum Downlink Power IE* included in the *RL Information IE*. If no *Minimum Downlink Power IE* is included (even if *CCH Minimum DL Transmission Power* IEs are included), any minimum DL power stored for already existing DCH type CCHs for this Node B Communication Context shall be applied.]
- [3.84 Mcps TDD - If the *DL CCH To Modify IE* is included and *Maximum CCH DL Power to Modify IE* and/or *Minimum CCH DL Power to Modify IE* are included, the Node B shall apply the values in the new configuration for this DCH type CCH. If the *RL Information IE* includes *Maximum Downlink Power* and/or the *Minimum Downlink Power* IEs, the Node B shall apply the values for all other DCH type CCHs of the radio link.]
- [1.28 Mcps TDD - If the *DL CCH To Add IE* is included, the Node B shall determine the maximum DL power for each timeslot within a DCH type CCH by the following rule: If the *Maximum DL Power IE* is included in the *DL Timeslot Information LCR IE* for that timeslot, then the Node B shall use that power for the maximum DL power, otherwise the maximum DL power is the *Maximum Downlink Power IE* included in the *RL Information IE*. The Node B shall store this value and not transmit with a higher power on any applicable DL DPCH. If no *Maximum Downlink Power IE* is included, any maximum DL power stored for already existing timeslots for this Node B Communication Context shall be applied.]
- [1.28 Mcps TDD - If the *DL CCH To Add IE* is included, the Node B shall determine the minimum DL power for each timeslot within a DCH type CCH by the following rule: If the *Minimum DL Power IE* is included in the *DL Timeslot Information LCR IE* for that timeslot, then the Node B shall use that power for the minimum DL power, otherwise the minimum DL power is the *Minimum Downlink Power IE* included in the *RL Information IE*. The Node B shall store this value and not transmit with a lower power on any applicable DL

DPCH. If no *Minimum Downlink Power* IE is included, any minimum DL power stored for already existing timeslots for this Node B Communication Context shall be applied.]

- [1.28 Mcps TDD - If the *DL CCH To Modify* IE is included and *Maximum DL Power to Modify LCR* IE and/or *Minimum DL Power to Modify LCR* IE are included, the Node B shall apply the values in the new configuration for this timeslot, if the *RL Information* IE includes *Maximum Downlink Power* and/or the *Minimum Downlink Power* IEs, the Node B shall apply the values in the new configuration for all other timeslots.]
- [3.84Mcps TDD – If the *RL Information* IE includes the *Initial DL Transmission Power* IE, the Node B shall determine the initial CCH DL power for each DCH type CCH by the following rule: If the *CCH Initial DL Transmission Power* IE is included for that CCH, then the Node B shall use that power for the initial CCH DL power, otherwise the initial CCH DL power is the *Initial DL Transmission Power* IE included in the *RL Information* IE. The Node B shall apply the determined initial CCH DL power to the transmission on each DPCH of the CCH when starting transmission on a new CCH until the UL synchronisation on the Uu interface is achieved for the CCH. If no *Initial DL Transmission Power* IE is included with a new CCH (even if *CCH Initial DL Transmission Power* IEs are included), the Node B shall use any transmission power level currently used on already existing CCHs when starting transmission for a new CCH. No inner loop power control shall be performed during this period. The DL power shall then vary according to the inner loop power control (see ref.[21], subclause 4.2.3.4).]
- [3.84Mcps TDD - The initial power, maximum power, and minimum power for a DSCH type CCH to be added or modified, shall be determined as follows:
  - If the DSCH type CCH is paired with an uplink CCH(s) for inner loop power control, the minimum, maximum and initial power for each PDSCH is determined in the same way as described above for DCH type CCHs.
  - If the DSCH type CCH is not paired with an uplink CCH(s) for inner loop power control, the PDSCH transmission power is DSCH Data Frame Protocol signalled [24], with the maximum value determined in the same way as described above for DCH type CCHs. The minimum and initial powers, however, are subject to control by the CRNC via the frame protocol].
- [1.28 Mcps TDD – If the *RL Information* IE includes the *Initial DL Transmission Power* IE, the Node B shall determine the initial DL power for each timeslot in a DCH type CCH by the following rule: If the *Initial DL Transmission Power* IE is included in the *DL Timeslot Information LCR* IE, then the Node B shall use that power for the initial DL power, otherwise the initial DL power is the *Initial DL Transmission Power* IE included in the *RL Information* IE. The Node B shall apply the given power to the transmission on each DL DPCH and on each Time Slot of the CCH when starting transmission until the UL synchronisation on the Uu interface is achieved for the CCH. If no *Initial DL Transmission Power* IE is included, the Node B shall use any transmission power level currently used on already existing timeslots for this Node B Communication Context. No inner loop power control shall be performed during this period. The DL power shall then vary according to the inner loop power control (see ref.[21], subclause 5.1.2.4).]
- [1.28Mcps TDD - If the *RL Information* IE includes the *Initial DL Transmission Power* IE, the Node B shall determine the initial DL power for each timeslot within the DSCH type CCH by the following rule: If both the *CCH Initial DL Transmission Power* IE and the *DL Time Slot ISCP Info LCR* IE are included then the Node B shall use that power for the PDSCH power, otherwise the PDSCH power is the *Initial DL Transmission Power* IE included in the *RL Information* IE. If *DL Time Slot ISCP info LCR* IE is present, the Node B shall use the indicated value when deciding the initial DL TX Power for each timeslot as specified in [21], it shall reduce the DL TX power in those downlink timeslots of the radio link where the interference is low, and increase the DL TX power in those timeslots where the interference is high, while keeping the total downlink power in the radio link unchanged. The Node B shall apply the given power to the transmission on each PDSCH and on each timeslot of the CCH when starting transmission on a new CCH until the UL synchronisation on the Uu interface is achieved for the CCH. If no *Initial DL Transmission Power* IE is included with a new CCH (even if *CCH Initial DL Transmission Power* IEs are included), the Node B shall use any transmission power level currently used on already existing RL/timeslots when starting transmission for a new CCH. No inner loop power control shall be performed during this period. The DL power shall then vary according to the inner loop power control (see ref.[21], subclause 5.1.2.4).]
- [1.28 Mcps TDD - If the *DL CCH To Add* IE is included, the Node B shall determine the maximum DL power for each timeslot within a DSCH type CCH by the following rule: If the *CCH Maximum DL Transmission Power* IE is included then the Node B shall use that power for the maximum DL power, otherwise

the maximum DL power is the *Maximum Downlink Power* IE included in the *RL Information* IE. The Node B shall store this value and not transmit with a higher power on any applicable DL PDSCH. If no *Maximum Downlink Power* IE is included, any maximum DL power stored for already existing timeslots for this Node B Communication Context shall be applied.]

- [1.28 Mcps TDD - If the *DL CCH To Add* IE is included, the Node B shall determine the minimum DL power for each timeslot within a DSCH type CCH by the following rule: If the *CCH Minimum DL Transmission Power* IE is included then the Node B shall use that power for the minimum DL power, otherwise the minimum DL power is the *Minimum Downlink Power* IE included in the *RL Information* IE. The Node B shall store this value and not transmit with a lower power on any applicable DL PDSCH. If no *Minimum Downlink Power* IE is included, any minimum DL power stored for already existing timeslots for this Node B Communication Context shall be applied.]
- [1.28 Mcps TDD - If the *DL CCH To Modify* IE is included and the *Maximum CCH DL Power to Modify* IE and/or the *Minimum CCH DL Power to Modify* IE are included, the Node B shall apply the values in the new configuration for this DSCH type CCH, if the *RL Information* IE includes *Maximum Downlink Power* and/or the *Minimum Downlink Power* IEs, the Node B shall apply the values in the new configuration for all other timeslots.]
- [FDD- If the *RL Information* IE includes the *DL DPCH Timing Adjustment* IE, the Node B shall adjust the timing of the radio link accordingly in the new configuration.]
- [1.28Mcps TDD – If the *RL Information* IE message contains the *Uplink Synchronisation Parameters LCR* IE, the Node B shall use the indicated values of *Uplink Synchronisation Step Size* IE and *Uplink Synchronisation Frequency* IE when evaluating the timing of the UL synchronisation.]

#### [TDD - PDSCH RL ID]:

- [TDD – If the RADIO LINK RECONFIGURATION PREPARE message includes the *PDSCH RL ID* IE then in the new configuration the Node B shall use the PDSCH and/or PUSCH in this radio link.]

#### Signalling bearer rearrangement:

If the RADIO LINK RECONFIGURATION PREPARE message includes the *Signalling Bearer Request Indicator* IE the Node B shall, if supported, allocate a new Communication Control Port for the control of the Node B Communication Context and include the *Target Communication Control Port ID* IE in the RADIO LINK RECONFIGURATION READY message.

#### HS-DSCH Setup:

If the *HS-DSCH Information* IE is present in the RADIO LINK RECONFIGURATION PREPARE message, then:

- The Node B shall setup the requested HS-PDSCH resources on the Serving HS-DSCH Radio Link indicated by the *HS-PDSCH RL ID* IE.
- The Node B shall include the *HARQ Memory Partitioning* IE in the [FDD – *HS-DSCH FDD Information Response* IE] [TDD – *HS-DSCH TDD Information Response* IE] in the RADIO LINK RECONFIGURATION READY message.
- If the RADIO LINK RECONFIGURATION PREPARE message includes the *MAC-hs Guaranteed Bit Rate* IE for a Priority Queue in the *HS-DSCH MAC-d Flows Information* IE in the *HS-DSCH Information* IE, then the Node B shall use this information to optimise MAC-hs scheduling decisions for the related HSDPA Priority Queue.
- If the RADIO LINK RECONFIGURATION PREPARE message includes the *Discard Timer* IE for a Priority Queue in the *HS-DSCH MAC-d Flows Information* IE in the *HS-DSCH Information* IE, then the Node B shall use this information to discard out-of-date MAC-hs SDUs from the related HSDPA Priority Queue.
- The Node B shall include the *HS-DSCH Initial Capacity Allocation* IE in the [FDD – *HS-DSCH FDD Information Response* IE] [TDD – *HS-DSCH TDD Information Response* IE] in the RADIO LINK RECONFIGURATION READY message for every HS-DSCH MAC-d flow being established, if the Node B allows the CRNC to start transmission of MAC-d PDUs before the Node B has allocated capacity on user plane as described in [24].

- [FDD – If the RADIO LINK RECONFIGURATION PREPARE message includes the *HS-SCCH Power Offset* IE in the *HS-DSCH Information* IE, then the Node B may use this value to determine the HS-SCCH power. The HS-SCCH Power Offset should be applied for any HS-SCCH transmission to this UE.]
- [FDD – If the RADIO LINK RECONFIGURATION PREPARE message includes the *Measurement Power Offset* IE in the *HS-DSCH Information* IE, then the Node B shall use the measurement power offset as described in ref [10], subclause 6A.2.]
- [FDD – The Node B shall allocate HS-SCCH codes corresponding to the HS-DSCH and include the *HS-SCCH Specific Information Response* IE in the *HS-DSCH FDD Information Response* IE in the RADIO LINK RECONFIGURATION READY message.]
- [TDD – The Node B shall allocate HS-SCCH parameters corresponding to the HS-DSCH and include the [3.84Mcps TDD – *HS-SCCH Specific Information Response* IE] [1.28Mcps TDD – *HS-SCCH Specific Information Response LCR* IE] in the *HS-DSCH TDD Information Response* IE in the RADIO LINK RECONFIGURATION READY message.]

#### **Intra-Node B Serving HS-DSCH Radio Link Change:**

If the RADIO LINK RECONFIGURATION PREPARE message includes the *HS-PDSCH RL ID* IE, this indicates the new Serving HS-DSCH Radio Link:

- In the new configuration the Node B shall de-allocate the HS-PDSCH resources of the old Serving HS-PDSCH Radio Link and allocate the HS-PDSCH resources for the new Serving HS-PDSCH Radio Link.
- The Node B may include the *HARQ Memory Partitioning* IE in the [FDD – *HS-DSCH FDD Information Response* IE] [TDD – *HS-DSCH TDD Information Response* IE] in the RADIO LINK RECONFIGURATION READY message.
- [FDD – The Node B shall allocate HS-SCCH codes corresponding to the HS-DSCH and include the *HS-SCCH Specific Information Response* IE in the *HS-DSCH FDD Information Response* IE in the RADIO LINK RECONFIGURATION READY message.]
- [TDD – The Node B shall allocate HS-SCCH parameters corresponding to the HS-DSCH and include the [3.84Mcps TDD – *HS-SCCH Specific Information Response* IE] [1.28Mcps TDD – *HS-SCCH Specific Information Response LCR* IE] in the *HS-DSCH TDD Information Response* IE in the RADIO LINK RECONFIGURATION READY message.]

#### **HS-DSCH Modification:**

If the RADIO LINK RECONFIGURATION PREPARE message includes the *HS-DSCH Information To Modify* IE, then:

- The Node B shall include the *HS-DSCH Initial Capacity Allocation* IE for every HS-DSCH MAC-d flow being modified for which a new transport bearer was requested with the *Transport Bearer Request Indicator* IE, if the Node B allows the CRNC to start transmission of MAC-d PDUs before the Node B has allocated capacity on user plane as described in [24].
- If the RADIO LINK RECONFIGURATION PREPARE message includes the *MAC-hs Guaranteed Bit Rate* IE in the *HS-DSCH Information To Modify* IE, the Node B shall use this information to optimise MAC-hs scheduling decisions for the related HSDPA Priority Queue.
- If the RADIO LINK RECONFIGURATION PREPARE message includes the *Discard Timer* IE in the *HS-DSCH Information* IE, then the Node B shall use this information to discard out-of-date MAC-hs SDUs from the related HSDPA Priority Queue.
- If the RADIO LINK RECONFIGURATION PREPARE message includes the *MAC-hs Window Size* IE or *TI* IE in the *HS-DSCH Information To Modify* IE, then the Node B shall use the indicated values in the new configuration for the related HSDPA Priority Queue.
- If the RADIO LINK RECONFIGURATION PREPARE message includes the *MAC-d PDU Size Index* IE in the *Modify Priority Queue* choice, the Node B shall delete the previous list of MAC-d PDU Size Index values for the related HSDPA Priority Queue and use the MAC-d PDU Size Index values indicated in the *MAC-d PDU Size Index* IE in the new configuration.

- [FDD - If the RADIO LINK RECONFIGURATION PREPARE message includes the *CQI Feedback Cycle k* IE, the *CQI Repetition Factor* IE, the *ACK-NACK Repetition Factor* IE, the *ACK Power Offset* IE, the *NACK Power Offset* IE or the *CQI Power Offset* IE in the *HS-DSCH Information To Modify* IE, then the Node B shall use the indicated CQI Feedback Cycle k value, the CQI Repetition Factor or the ACK-NACK Repetition Factor, ACK Power Offset, the NACK Power Offset or the CQI Power Offset in the new configuration.]
- [FDD - If the *HS-SCCH Power Offset* IE is included in the *HS-DSCH Information To Modify* IE, the Node B may use this value to determine the HS-SCCH power. The HS-SCCH Power Offset should be applied for any HS-SCCH transmission to this UE.]
- [FDD - If the RADIO LINK RECONFIGURATION PREPARE message includes *Measurement Power Offset* IE in the *HS-DSCH Information* IE or the *HS-DSCH Information To Modify* IE, then the Node B shall use the measurement power offset as described in [10] subclause 6A.2.]
- [TDD – If the RADIO LINK RECONFIGURATION PREPARE message includes the *TDD ACK NACK Power Offset* IE in the *HS-DSCH Information To Modify* IE, the Node B shall use the indicated power offset in the new configuration.]
- [FDD - If the *HS-DSCH Information To Modify* IE includes the *HS-SCCH Code Change Grant* IE, then the Node B may modify the HS-SCCH codes corresponding to the HS-DSCH. The Node B shall then report the codes which are used in the new configuration specified in the *HS-SCCH Specific Information Response* IE in the RADIO LINK RECONFIGURATION READY message.]
- [TDD - If the *HS-DSCH Information To Modify* IE includes the *HS-SCCH Code Change Grant* IE, then the Node B may modify the HS-SCCH parameters corresponding to the HS-DSCH. The Node B shall then report the values for the parameters which are used in the new configuration specified in the [3.84Mcps TDD - *HS-SCCH Specific Information Response*] [1.28Mcps TDD - *HS-SCCH Specific Information Response LCR*] IEs in the RADIO LINK RECONFIGURATION READY message.]

#### **HS-DSCH MAC-d Flow Addition/Deletion:**

If the RADIO LINK RECONFIGURATION PREPARE message includes any *HS-DSCH MAC-d Flows To Add* or *HS-DSCH MAC-d Flows To Delete* IEs, then the Node B shall use this information to add/delete the indicated HS-DSCH MAC-d flows. When an HS-DSCH MAC-d flow is deleted, all its associated Priority Queues shall also be removed.

If the RADIO LINK RECONFIGURATION PREPARE message includes an *HS-DSCH MAC-d Flows To Delete* IE requesting the deletion of all remaining HS-DSCH MAC-d flows for the Node B Communication Context, then the Node B shall delete the HS-DSCH configuration from the Node B Communication Context and release the HS-PDSCH resources.

If the RADIO LINK RECONFIGURATION PREPARE message includes the *HS-DSCH MAC-d Flows To Add* IE, then:

- The Node B shall include the *HS-DSCH Initial Capacity Allocation* IE in the RADIO LINK RECONFIGURATION READY message for every HS-DSCH MAC-d flow being added, if the Node B allows the CRNC to start transmission of MAC-d PDUs before the Node B has allocated capacity on user plane as described in [24].
- If the RADIO LINK RECONFIGURATION PREPARE message includes the *MAC-hs Guaranteed Bit Rate* IE in the *HS-DSCH MAC-d Flows To Add* IE, the Node B shall use this information to optimise MAC-hs scheduling decisions for the related HSDPA Priority Queue.
- If the RADIO LINK RECONFIGURATION PREPARE message includes the *Discard Timer* IE in the *HS-DSCH Information* IE, then the Node B shall use this information to discard out-of-date MAC-hs SDUs from the related HSDPA Priority Queue.
- The Node B may include the *HARQ Memory Partitioning* IE in the RADIO LINK RECONFIGURATION READY message.

#### **E-DCH Setup:**

If the *E-DCH FDD Information* IE is present in the RADIO LINK RECONFIGURATION PREPARE message:

- The Node B shall setup the requested E-DCH resources on the Radio Links indicated by the *E-DCH RL Indication* IE in the *RL Information* IE.



- If the RADIO LINK RECONFIGURATION PREPARE message includes the *MAC-es Guaranteed Bit Rate IE* in the *Data Description Indicator IE* in the *E-DCH FDD Information IE*, then the Node B shall use this information to optimise MAC-e scheduling decisions.
- If the RADIO LINK RECONFIGURATION PREPARE message includes the the *Maximum Number Of Transmissions For E-DCH IE* in the *E-DCH FDD Information IE*, then the Node B shall use this information to report if the maximum number of transmissions has elapsed.
- If the *TNL QoS IE* is included for a E-DCH MAC-d flow and if ALCAP is not used, the *TNL QoS IE* may be used by the Node B to determine the transport bearer characteristics to apply in the uplink for the related MAC-d flow.
- The Node B shall include the *E-AGCH And E-RGCH/E-HICH FDD Scrambling Code IE*, the *E-RGCH/E-HICH Channelisation Code IE* and the corresponding *Sequence Number IEs* in the *E-DCH FDD DL Control Channel Information IE* in the RADIO LINK RECONFIGURATION READY message for every RL indicated by the *E-DCH RL Indication IE* in the *RL Information IE*.
- If the RADIO LINK RECONFIGURATION PREPARE message includes the *Serving E-DCH RL IE* indicating that the Serving E-DCH RL is in this Node B, then the Node B shall allocate an E-RNTI identifier for the corresponding RL and include this E-RNTI identifier and the channelisation code of the corresponding E-AGCH in the *E-DCH FDD DL Control Channel Information IE* in the RADIO LINK RECONFIGURATION READY message.

#### **Serving E-DCH Radio Link Change:**

If the RADIO LINK RECONFIGURATION PREPARE message includes the *Serving E-DCH RL IE*, this indicates the new Serving E-DCH Radio Link:

- If the old Serving E-DCH RL is in this Node B, the Node B shall de-allocate the E-AGCH resources of the old Serving E-DCH Radio Link.
- If the new Serving E-DCH RL is in this Node B, the Node B shall allocate an E-RNTI identifier for the new Serving E-DCH Radio Link and include this identifier along with the channelisation code of the corresponding E-AGCH in the *E-DCH FDD DL Control Channel Information IE* in the RADIO LINK RECONFIGURATION READY message.

#### **E-DCH Modification:**

If the RADIO LINK RECONFIGURATION PREPARE message includes the *E-DCH FDD Information To Modify IE*, then:

- If the RADIO LINK RECONFIGURATION PREPARE message includes the *Data Description Indicator IE*, the Node B shall delete the previous list of Data Description Indicator values for this Node B Communication Context and use the DDI values indicated in the *Data Description Indicator IE* in the new configuration.

#### **E-DCH MAC-d Flow Addition/Deletion:**

If the RADIO LINK RECONFIGURATION PREPARE message includes any *E-DCH MAC-d Flows To Add* or *E-DCH MAC-d Flows To Delete IEs*, then the Node B shall use this information to add/delete the indicated E-DCH MAC-d flows. When an E-DCH MAC-d flow is deleted, all its associated configuration data shall also be removed.

If the RADIO LINK RECONFIGURATION PREPARE message includes an *E-DCH MAC-d Flows To Delete IE* requesting the deletion of all remaining E-DCH MAC-d flows for the UE Context, then the Node B shall delete the E-DCH configuration from the Node B Communication Context and release the E-DCH resources.

If the RADIO LINK RECONFIGURATION PREPARE message includes the *E-DCH MAC-d Flows To Add IE*, then:

- If the RADIO LINK RECONFIGURATION PREPARE message includes the *MAC-es Guaranteed Bit Rate IE* in the *E-DCH MAC-d Flows To Add IE*, the Node B shall use this information to optimise MAC-e scheduling decisions.
- If the RADIO LINK RECONFIGURATION PREPARE message includes the the *Maximum Number of Transmissions for E-DCH IE* in the *E-DCH MAC-d Flows To Add IE*, then the Node B shall use this information to report if the maximum number of transmissions has elapsed.

**[FDD - Phase Reference Handling]:**

[FDD – If the RADIO LINK RECONFIGURATION PREPARE message includes the *Primary CPICH Usage For Channel Estimation* IE, the Node B shall assume that Primary CPICH usage for channel estimation has been reconfigured.]

[FDD – If the RADIO LINK RECONFIGURATION PREPARE message includes the *Secondary CPICH Information Change* IE, the Node B shall assume that Secondary CPICH usage for channel estimation has been reconfigured.]

**General**

If the RADIO LINK RECONFIGURATION PREPARE message includes the *Transport Layer Address* IE and *Binding ID* IEs in the *DSCHs To Modify*, *DSCHs To Add*, [TDD - *USCHs To Modify*, *USCHs To Add*], *HS-DSCH Information*, *HS-DSCH Information To Modify*, *HS-DSCH MAC-d Flows To Add*, *E-DCH Information*, *E-DCH Information To Modify*, *E-DCH MAC-d Flows To Add* or in the *RL Specific DCH Information* IEs, the Node B may use the transport layer address and the binding identifier received from the CRNC when establishing a transport bearer for any Transport Channel or ~~HS-DSCH~~ MAC-d flow being added, or any Transport Channel or ~~HS-DSCH~~ MAC-d flow being modified for which a new transport bearer was requested with the *Transport Bearer Request Indicator* IE.

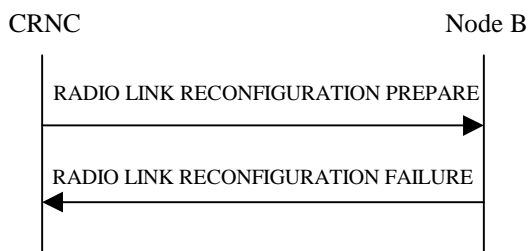
If the requested modifications are allowed by the Node B and the Node B has successfully reserved the required resources for the new configuration of the Radio Link(s), it shall respond to the CRNC with the RADIO LINK RECONFIGURATION READY message. When this procedure has been completed successfully there exists a Prepared Reconfiguration, as defined in subclause 3.1.

The Node B shall include in the RADIO LINK RECONFIGURATION READY message the *Transport Layer Address* IE and the *Binding ID* IE for any Transport Channel or ~~HS-DSCH~~ MAC-d flow being added or any Transport Channel or ~~HS-DSCH~~ MAC-d flow being modified for which a new transport bearer was requested with the *Transport Bearer Request Indicator* IE.

In the case of a set of co-ordinated DCHs requiring a new transport bearer on the Iub interface, the *Transport Layer Address* IE and the *Binding ID* IE in the *DCH Information Response* IE shall be included only for one of the DCH in the set of co-ordinated DCHs.

In the case of a Radio Link being combined with another Radio Link within the Node B, the *Transport Layer Address* IE and the *Binding ID* IE in the *DCH Information Response* IE shall be included only for one of the combined Radio Links.

**8.3.2.3 Unsuccessful Operation**



**Figure 31: Synchronised Radio Link Reconfiguration Preparation procedure, Unsuccessful Operation**

If the Node B cannot reserve the necessary resources for all the new DCHs of one set of co-ordinated DCHs requested to be added, it shall regard the Synchronised Radio Link Reconfiguration Preparation procedure as having failed.

If the requested Synchronised Radio Link Reconfiguration Preparation procedure fails for one or more RLs, the Node B shall send the RADIO LINK RECONFIGURATION FAILURE message to the CRNC, indicating the reason for failure.

Typical cause values are as follows:

**Radio Network Layer Cause**

- UL SF not supported
- DL SF not supported

- Downlink Shared Channel Type not supported
- Uplink Shared Channel Type not supported
- CM not supported
- Number of DL codes not supported
- Number of UL codes not supported
- RL Timing Adjustment not supported

#### Transport Layer Cause

- Transport Resources Unavailable

#### Miscellaneous Cause

- O&M Intervention
- Control processing overload
- HW failure

### 8.3.2.4 Abnormal Conditions

If only a subset of all the DCHs belonging to a set of co-ordinated DCHs is requested to be deleted, the Node B shall regard the Synchronised Radio Link Reconfiguration Preparation procedure as having failed and shall send the RADIO LINK RECONFIGURATION FAILURE message to the CRNC.

If more than one DCH of a set of co-ordinated DCHs has the *QE-Selector* IE set to "selected" [TDD – or no DCH of a set of co-ordinated DCHs has the *QE-Selector* IE set to "selected"], the Node B shall regard the Synchronised Radio Link Reconfiguration Preparation procedure as failed and shall respond with a RADIO LINK RECONFIGURATION FAILURE message.

[FDD - If the *RL Information* IE includes the *SSDT Indication* IE set to "SSDT Active in the UE" and SSDT is not active in the current configuration, the Node B shall regard the Synchronised Radio Link Reconfiguration Preparation procedure as failed if the *UL DPCH Information* IE does not include the *SSDT Cell Identity Length* IE. In this case, it shall respond with a RADIO LINK RECONFIGURATION FAILURE message.]

If the RADIO LINK RECONFIGURATION PREPARE message includes a *DCHs To Modify* IE or *DCHs To Add* IE with multiple *DCH Specific Info* IEs, and if the DCHs in the *DCHs To Modify* IE or *DCHs To Add* IE do not have the same *Transmission Time Interval* IE in the *Semi-Static Transport Format Information* IE, then the Node B shall reject the procedure using the RADIO LINK RECONFIGURATION FAILURE message.

[FDD - If the *RL Information* IE includes the *DL Reference Power* IE, but the power balancing is not active in the indicated RL(s), the Node B shall regard the Synchronised Radio Link Reconfiguration Preparation procedure as having failed and the Node B shall respond with the RADIO LINK RECONFIGURATION FAILURE message with the cause value "Power Balancing status not compatible".]

[FDD - If the power balancing is active with the Power Balancing Adjustment Type of the Node B Communication Context set to "Common" in the existing RL(s) but the RADIO LINK RECONFIGURATION PREPARE message IE includes more than one *DL Reference Power* IE, the Node B shall regard the Synchronised Radio Link Reconfiguration Preparation procedure as having failed and the Node B shall respond with the RADIO LINK RECONFIGURATION FAILURE message with the cause value "Power Balancing status not compatible".]

[FDD – If the RADIO LINK RECONFIGURATION PREPARE message includes the *Length Of TFCI2* IE but the *TFCI Signalling Option* IE is set to "Normal", then the Node B shall reject the procedure using the RADIO LINK RECONFIGURATION FAILURE message.]

[FDD – If the RADIO LINK RECONFIGURATION PREPARE message does not include the *Length Of TFCI2* IE but the *Split Type* IE is set to "Logical", then the Node B shall reject the procedure using the RADIO LINK RECONFIGURATION FAILURE message.]

[FDD – If the RADIO LINK RECONFIGURATION PREPARE message includes the *Split Type* IE set to the value "Hard" and the *Length Of TFCI2* IE set to the value "1", "2", "5", "8", "9" or "10", then the Node B shall reject the procedure using the RADIO LINK RECONFIGURATION FAILURE message.]

If the RADIO LINK RECONFIGURATION PREPARE message contains the *Transport Layer Address* IE or the *Binding ID* IE when establishing a transport bearer for any Transport Channel or HS-DSCH MAC-d flow being added, or any Transport Channel or HS-DSCH MAC-d flow being modified for which a new transport bearer was requested with the *Transport Bearer Request Indicator* IE, and not both are present for a transport bearer intended to be established, the Node B shall reject the procedure using the RADIO LINK RECONFIGURATION FAILURE message.

[FDD – If the RADIO LINK RECONFIGURATION PREPARE message is to modify UE channel estimation information for an existing RL and the modification is not allowed according to [10] subclause 4.3.2.1, the Node B shall reject the procedure using the RADIO LINK RECONFIGURATION FAILURE message.]

If the RADIO LINK RECONFIGURATION PREPARE message contains any of the *HS-DSCH Information To Modify* IE, *HS-DSCH MAC-d Flows To Add* IE or *HS-DSCH MAC-d Flows To Delete* IE in addition to the *HS-DSCH Information* IE, the Node B shall reject the procedure using the RADIO LINK RECONFIGURATION FAILURE message.

If the RADIO LINK RECONFIGURATION PREPARE message contains any of the *HS-DSCH Information To Modify* IE, *HS-DSCH MAC-d Flows To Add* IE, *HS-DSCH MAC-d Flows To Delete* IE or *HS-PDSCH RL ID* IE and the Serving HS-DSCH Radio Link is not in the Node B, the Node B shall reject the procedure using the RADIO LINK RECONFIGURATION FAILURE message.

If the RADIO LINK RECONFIGURATION PREPARE message includes the *HS-DSCH Information* IE and does not include the *HS-PDSCH RL-ID* IE, the Node B shall reject the procedure using the RADIO LINK RECONFIGURATION FAILURE message.

If the RADIO LINK RECONFIGURATION PREPARE message includes the *HS-DSCH Information To Modify* IE deleting the last remaining Priority Queue of an HS-DSCH MAC-d Flow, the Node B shall reject the procedure using the RADIO LINK RECONFIGURATION FAILURE message.

If the RADIO LINK RECONFIGURATION PREPARE message includes the *HS-PDSCH RL-ID* IE indicating a Radio Link not existing in the Node B Communication Context, the Node B shall reject the procedure using the RADIO LINK RECONFIGURATION FAILURE message.

[TDD - If multiple radio links exist within the Node B Communication Context and the RADIO LINK RECONFIGURATION PREPARE message does not include a *RL ID* IE within each *UL DPCH To Add Per RL* IE, *DL DPCH To Add Per RL* IE, *UL DPCH To Modify Per RL* IE, and *DL DPCH To Modify Per RL* IE that is present in the message, the Node B shall reject the procedure using the RADIO LINK RECONFIGURATION FAILURE message.]

If the RADIO LINK RECONFIGURATION PREPARE message contains any of the *HS-DSCH Information* IE, *HS-DSCH Information To Modify* IE, or *HS-DSCH MAC-d Flows To Add* IE and if in the new configuration the Priority Queues associated with the same *HS-DSCH MAC-d Flow ID* IE have the same *Scheduling Priority Indicator* IE value, the Node B shall reject the procedure using the RADIO LINK RECONFIGURATION FAILURE message.

### 8.3.3 Synchronised Radio Link Reconfiguration Commit

#### 8.3.3.1 General

This procedure is used to order the Node B to switch to the new configuration for the Radio Link(s) within the Node B, previously prepared by the Synchronised Radio Link Reconfiguration Preparation procedure.

The message shall use the Communication Control Port assigned for this Node B Communication Context.

### 8.3.3.2 Successful Operation



**Figure 32: Synchronised Radio Link Reconfiguration Commit procedure, Successful Operation**

The Node B shall switch to the new configuration previously prepared by the Synchronised Radio Link Reconfiguration Preparation procedure at the next coming CFN with a value equal to the value requested by the CRNC in the *CFN* IE (see ref.[17] subclause 9.4) when receiving the RADIO LINK RECONFIGURATION COMMIT message from the CRNC.

[FDD – If the *Active Pattern Sequence Information* IE is included in the RADIO LINK RECONFIGURATION COMMIT message, the *CM Configuration Change CFN* IE in the *Active Pattern Sequence Information* IE shall be ignored by the Node B.]

When this procedure has been completed the Prepared Reconfiguration does not exist any more, see subclause 3.1.

In the case of a transport channel modification for which a new transport bearer was requested and established, the switch to the new transport bearer shall also take place at the indicated CFN. The detailed frame protocol handling during transport bearer replacement is described in [16], subclause 5.10.1 and in [24], subclause 5.8.2.

In the case of a signalling bearer re-arrangement, the new Communication Control Port shall be used once the Node B has received the RADIO LINK RECONFIGURATION COMMIT message via the old Communication Control Port.

[FDD – If the RADIO LINK RECONFIGURATION COMMIT includes the *Active Pattern Sequence Information* IE, the Node B shall deactivate all the ongoing Transmission Gap Pattern Sequences at the *CFN* IE. From that moment on, all Transmission Gap Pattern Sequences included in *Transmission Gap Pattern Sequence Status* IE repetitions shall be started when the indicated *TGCFN* IE elapses. The *CFN* IE and *TGCFN* IE for each sequence refer to the next coming CFN with that value. If the values of the *CFN* IE and the *TGCFN* IE are equal, the concerned Transmission Gap Pattern Sequence shall be started immediately at the CFN with a value equal to the value received in the *CFN* IE.]

### 8.3.3.3 Abnormal Conditions

If a new transport bearer is required for the new reconfiguration and it is not available at the requested CFN, the Node B shall initiate the Radio Link Failure procedure.

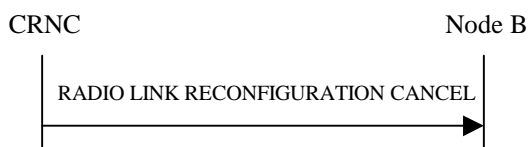
## 8.3.4 Synchronised Radio Link Reconfiguration Cancellation

### 8.3.4.1 General

This procedure is used to order the Node B to release the new configuration for the Radio Link(s) within the Node B, previously prepared by the Synchronised Radio Link Preparation Reconfiguration procedure.

The message shall use the Communication Control Port assigned for this Node B Communication Context.

### 8.3.4.2 Successful Operation



**Figure 33: Synchronised Radio Link Reconfiguration Cancellation procedure, Successful Operation**

When receiving the RADIO LINK RECONFIGURATION CANCEL message from the CRNC, the Node B shall release the new configuration ([FDD - including the new Transmission Gap Pattern Sequence parameters (if existing)]) previously prepared by the Synchronised Radio Link Reconfiguration Preparation procedure and continue using the old configuration. When this procedure has been completed the Prepared Reconfiguration does not exist any more, see subclause 3.1.

### 8.3.4.3 Abnormal Conditions

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## 8.3.5 Unsynchronised Radio Link Reconfiguration

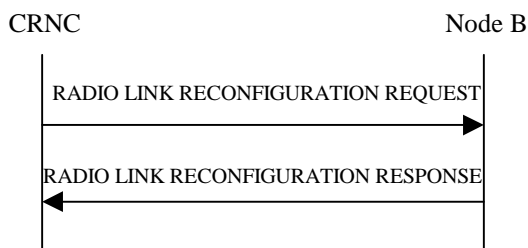
### 8.3.5.1 General

The Unsynchronised Radio Link Reconfiguration procedure is used to reconfigure Radio Link(s) related to one UE-UTRAN connection within a Node B.

The Unsynchronised Radio Link Reconfiguration procedure is used when there is no need to synchronise the time of the switching from the old to the new configuration in one Node B used for a UE-UTRAN connection with any other Node B also used for the UE-UTRAN connection.

The Unsynchronised Radio Link Reconfiguration procedure shall not be initiated if a Prepared Reconfiguration exists, as defined in subclause 3.1.

### 8.3.5.2 Successful Operation



**Figure 34: Unsynchronised Radio Link Reconfiguration Procedure, Successful Operation**

The Unsynchronised Radio Link Reconfiguration procedure is initiated by the CRNC by sending the RADIO LINK RECONFIGURATION REQUEST message to the Node B. The message shall use the Communication Control Port assigned for this Node B Communication Context.

Upon reception, the Node B shall modify the configuration of the Radio Link(s) according to the parameters given in the message. Unless specified below, the meaning of parameters is specified in other specifications.

The Node B shall prioritise resource allocation for the RL(s) to be modified according to Annex A.

#### **DCH Modification:**

If the RADIO LINK RECONFIGURATION REQUEST message includes any *DCHs To Modify* IE then the Node B shall treat them each as follows:

- If the *DCHs To Modify* IE includes the *Frame Handling Priority* IE, the Node B should store this information for this DCH in the new configuration. The received Frame Handling Priority should be used when prioritising between different frames in the downlink on the Uu interface in congestion situations within the Node B once the new configuration has been activated.
- If the *DCHs To Modify* IE includes the *TNL QoS* IE for a DCH or a set of co-ordinated DCHs to be modified and if ALCAP is not used, the Node B may store this information for this DCH in the new configuration. The *TNL QoS* IE may be used to determine the transport bearer characteristics to apply for the uplink between the Node B and the CRNC for the related DCH or set of co-ordinated DCHs.

- If the *DCHs To Modify* IE includes the *Transport Format Set* IE for the UL, the Node B shall apply the new Transport Format Set in the Uplink of this DCH in the new configuration.
- If the *DCHs To Modify* IE includes the *Transport Format Set* IE for the DL, the Node B shall apply the new Transport Format Set in the Downlink of this DCH in the new configuration.
- If the *DCHs To Modify* IE includes the *Allocation/Retention Priority* IE for a DCH, the Node B shall apply the new Allocation/Retention Priority to this DCH in the new configuration according to Annex A.
- If the *DCHs To Modify* IE includes multiple *DCH Specific Info* IEs, then the Node B shall treat the DCHs in the *DCHs To Modify* IE as a set of co-ordinated DCHs. The Node B shall include these DCHs in the new configuration only if it can include all of them in the new configuration.
- If the *DCHs To Modify* IE includes the *UL FP Mode* IE for a DCH or a set of co-ordinated DCHs, the Node B shall apply the new FP Mode in the Uplink of the user plane for the DCH or the set of co-ordinated DCHs in the new configuration.
- If the *DCHs To Modify* IE includes the *ToAWS* IE for a DCH or a set of co-ordinated DCHs, the Node B shall apply the new ToAWS in the user plane for the DCH or the set of co-ordinated DCHs in the new configuration.
- If the *DCHs To Modify* IE includes the *ToAWE* IE for a DCH or a set of co-ordinated DCHs, the Node B shall apply the new ToAWE in the user plane for the DCH or the set of co-ordinated DCHs in the new configuration.
- [TDD – If the RADIO LINK RECONFIGURATION REQUEST message includes the *CCTrCH ID* IE for the DL of a DCH to be modified, the Node B shall apply the new CCTrCH ID in the Downlink of this DCH in the new configuration.]
- [TDD – If the RADIO LINK RECONFIGURATION REQUEST message includes the *CCTrCH ID* IE for the UL of a DCH to be modified, the Node B shall apply the new CCTrCH ID in the Uplink of this DCH in the new configuration.]

#### **DCH Addition:**

If the RADIO LINK RECONFIGURATION REQUEST message includes any *DCH To Add* IE, the Node B shall reserve necessary resources for the new configuration of the Radio Link(s) according to the parameters given in the message and include these DCHs in the new configuration. In particular:

- If a *DCHs To Add* IE includes multiple *DCH Specific Info* IEs for a DCH to be added, the Node B shall treat the DCHs in the *DCHs To Add* IE as a set of co-ordinated DCHs. The Node B shall include these DCHs in the new configuration only if it can include all of them in the new configuration.
- If the *DCH Specific Info* IE includes the *Unidirectional DCH Indicator* IE set to "Uplink DCH only", the Node B shall ignore the *Transport Format Set* IE for the downlink for this DCH. As a consequence this DCH is not included as a part of the downlink CCTrCH.
- [TDD – If the *DCH Specific Info* IE includes the *Unidirectional DCH Indicator* IE set to "Downlink DCH only", the Node B shall ignore the *Transport Format Set* IE for the uplink for this DCH. As a consequence this DCH is not included as a part of the uplink CCTrCH.]
- [FDD - For DCHs which do not belong to a set of co-ordinated DCHs with the *QE-Selector* IE set to "selected", the Node B shall use the Transport channel BER from that DCH as the base for the QE in the UL data frames. If no Transport channel BER is available for the selected DCH, the Physical channel BER shall be used for the QE [16]. If the *QE-Selector* IE is set to "non-selected", the Physical channel BER shall be used for the QE in the UL data frames, ref. [16].]
- For a set of co-ordinated DCHs, the Node B shall use the Transport channel BER from the DCH with the *QE-Selector* IE set to "selected" as the QE in the UL data frames [16]. [FDD – If no Transport channel BER is available for the selected DCH, the Physical channel BER shall be used for the QE [16]. If all DCHs have the *QE-Selector* IE set to "non-selected", the Physical channel BER shall be used for the QE [16].]
- The Node B should store the *Frame Handling Priority* IE received for a DCH to be added in the new configuration. The received Frame Handling Priority should be used when prioritising between different frames in the downlink on the Uu interface in congestion situations within the Node B once the new configuration has been activated.

- If the *TNL QoS* IE is included for a DCH or a set of co-ordinated DCHs and if ALCAP is not used, the Node B may store this information for this DCH in the new configuration. The *TNL QoS* IE may be used to determine the transport bearer characteristics to apply for the uplink between the Node B and the CRNC for the related DCH or set of co-ordinated DCHs.
- The Node B shall use the included *UL FP Mode* IE for a DCH or a set of co-ordinated DCHs to be added as the new FP Mode in the Uplink of the user plane for the DCH or the set of co-ordinated DCHs in the new configuration.
- The Node B shall use the included *ToAWS* IE for a DCH or a set of co-ordinated DCHs to be added as the new Time of Arrival Window Startpoint in the user plane for the DCH or the set of co-ordinated DCHs in the new configuration.
- The Node B shall use the included *ToAWE* IE for a DCH or a set of co-ordinated DCHs to be added as the new Time of Arrival Window Endpoint in the user plane for the DCH or the set of co-ordinated DCHs in the new configuration.
- [TDD – If the RADIO LINK RECONFIGURATION REQUEST message includes the *CCTrCH ID* IE for the DL of a DCH to be added, the Node B shall apply the new CCTrCH ID in the downlink of this DCH in the new configuration.]
- [TDD – If the RADIO LINK RECONFIGURATION REQUEST message includes the *CCTrCH ID* IE for the UL of a DCH to be added, the Node B shall apply the new CCTrCH ID in the Uplink of this DCH in the new configuration.]

#### **DCH Deletion:**

If the RADIO LINK RECONFIGURATION REQUEST message includes any DCH to be deleted from the Radio Link(s), the Node B shall not include this DCH in the new configuration.

If all of the DCHs belonging to a set of co-ordinated DCHs are requested to be deleted, the Node B shall not include this set of co-ordinated DCHs in the new configuration.

#### **[FDD - Physical Channel Modification]:**

[FDD - If the RADIO LINK RECONFIGURATION REQUEST message includes an *UL DPCH Information* IE, then the Node B shall apply the parameters to the new configuration as follows:]

- [FDD - If the *UL DPCH Information* IE includes the *TFCS* IE for the UL, the Node B shall apply the new TFCS in the Uplink of the new configuration.]

[FDD – If the RADIO LINK RECONFIGURATION REQUEST message includes a *DL DPCH Information* IE, then the Node B shall apply the parameters to the new configuration as follows:]

- [FDD – If the *DL DPCH Information* IE includes on the *TFCS* IE for the DL, the Node B shall apply the new TFCS in the Downlink of the new configuration.]
- [FDD – If the *DL DPCH Information* IE includes the *TFCI Signalling Mode* IE, the Node B shall use the information when building TFCIs in the new configuration.
- [FDD – If the *Length Of TFCI2* IE is included, then the Node B shall apply the length of TFCI (field 2) indicated in the message in the new configuration.]
- [FDD – If the *Length Of TFCI2* IE is not included and the *Split Type* IE is present with the value "Hard", then the Node B shall assume the value of the TFCI (field 2) is 5 bits in the new configuration.]
- [FDD – If the *DL DPCH Information* IE includes the *Limited Power Increase* IE set to "Used", the Node B shall, if supported, use Limited Power Increase according to ref. [10] subclause 5.2.1 for the inner loop DL power control in the new configuration.]
- [FDD – If the *DL DPCH Information* IE includes the *Limited Power Increase* IE set to "Not Used", the Node B shall not use Limited Power Increase for the inner loop DL power control in the new configuration.]

[FDD – If the RADIO LINK RECONFIGURATION REQUEST message includes the *Transmission Gap Pattern Sequence Information* IE, the Node B shall store the new information about the Transmission Gap Pattern Sequences to



be used in the new Compressed Mode Configuration. Any Transmission Gap Pattern Sequences already existing in the previous Compressed Mode Configuration are replaced by the new sequences once the new Compressed Mode Configuration has been activated. This new Compressed Mode Configuration shall be valid in the Node B until the next Compressed Mode Configuration is configured in the Node B or Node B Communication Context is deleted.]

[FDD - E-DPCH Handling: If the *UL DPDCH Indicator For E-DCH Operation IE* is set to "UL DPDCH not present" the *Min UL Channelisation Code Length IE*, the *Puncture Limit IE* and the *TFCS IE*, within the *UL DPCH Information IE* shall be ignored.]

[FDD - If the RADIO LINK RECONFIGURATION REQUEST message includes an *E-DPCH Information IE* which contains the *E-TFCS IE*, the Node B shall use the *E-TFCS IE* for the E-DCH when reserving resources for the uplink of the new configuration. The Node B shall apply the new TFCS in the uplink of the new configuration.]

#### **[TDD – UL/DL CCTrCH Modification]**

[TDD – If the RADIO LINK RECONFIGURATION REQUEST message includes any *UL CCTrCH To Modify IE* or *DL CCTrCH To Modify IE* in the Radio Link(s), the Node B shall reserve necessary resources for the new configuration of the Radio Link(s) according to the parameters given in the message.]

[TDD – If the *UL CCTrCH To Modify IE* or *DL CCTrCH To Modify IE* includes *TFCS IE* and/or *Puncture Limit IE*, the Node B shall apply these as the new values, otherwise the old values specified for this CCTrCH are still applicable.]

[1.28Mcps TDD - If the *UL CCTrCH To Modify IE* includes *UL SIR Target IE*, the Node B shall apply this value as the new configuration and use it for the UL inner loop power control according [19] and [21].]

#### **[TDD – UL/DL CCTrCH Deletion]**

[TDD – If the RADIO LINK RECONFIGURATION REQUEST message includes any *UL CCTrCH To Delete IE* or *DL CCTrCH To Delete IE*, the Node B shall not include this CCTrCH in the new configuration.]

#### **DL Power Control:**

- [FDD – If the *Radio Link Information IE* includes the *DL Reference Power IE* and the power balancing is active, the Node B shall update the reference power of the power balancing in the indicated RL(s), if updating of power balancing parameters by the RADIO LINK RECONFIGURATION REQUEST message is supported, using the *DL Reference Power IE* in the RADIO LINK RECONFIGURATION REQUEST message. The updated reference power shall be used from the next adjustment period.]

[FDD – If updating of power balancing parameters by the RADIO LINK RECONFIGURATION REQUEST message is supported by the Node B, the Node B shall include the *DL Power Balancing Updated Indicator IE* in the *RL Information Response IE* for each affected RL in the RADIO LINK RECONFIGURATION RESPONSE message.]

#### **RL Information:**

If the RADIO LINK RECONFIGURATION REQUEST message includes the *RL Information IE*, the Node B shall treat it as follows:

- [FDD - If the *RL Information IE* includes the *Maximum DL Power IE*, the Node B shall apply this value to the new configuration and not transmit with a higher power on any Downlink DPCH of the Radio Link once the new configuration is being used. During compressed mode, the  $\delta P_{curr}$ , as described in ref.[10] subclause 5.2.1.3, shall be added to the maximum DL power for the associated compressed frame.]
- [FDD - If the *RL Information IE* includes the *Minimum DL Power IE*, the Node B shall apply this value to the new configuration and never transmit with a lower power on any Downlink Channelisation Code of the Radio Link once the new configuration is being used.]
- [3.84 Mcps TDD - If the *CCTrCH Maximum DL Transmission Power IE* and/or the *CCTrCH Minimum DL Transmission Power IE* are included, the Node B shall apply the values in the new configuration for this DCH type CCTrCH, if the *RL Information IE* includes *Maximum Downlink Power* and/or the *Minimum Downlink Power IEs*, the Node B shall apply the values in the new configuration for all other DCH type CCTrCHs.]
- [3.84 Mcps TDD – The maximum power and minimum power for a DSCH type CCTrCH to be modified, shall be determined as follows:

- If the DSCH type CCTrCH is paired with an uplink CCTrCH(s) for inner loop power control, the minimum and maximum power for each PDSCH is determined in the same way as described above for DCH type CCTrCHs.
- If the DSCH type CCTrCH is not paired with an uplink CCTrCH(s) for inner loop power control, the PDSCH transmission power is DSCH Data Frame Protocol signalled [24], with the maximum value determined in the same way as described above for DCH type CCTrCHs. The minimum power, however, is subject to control by the CRNC via the frame protocol].
- [1.28 Mcps TDD - If *Maximum DL Power IE* and/or *Minimum DL Power IE* are included within *DL Timeslot Information LCR IE*, the the Node B shall apply the values in the new configuration for this timeslot within a DCH type CCTrCH, if the *RL Information IE* includes *Maximum Downlink Power* and/or the *Minimum Downlink Power IEs*, the Node B shall apply the values in the new configuration for all other timeslots.]
- [1.28 Mcps TDD - If the *CCTrCH Maximum DL Transmission Power IE* and/or the *CCTrCH Minimum DL Transmission Power IE* are included, the Node B shall apply the values in the new configuration for this DSCH type CCTrCH, if the *RL Information IE* includes the *Maximum Downlink Power* and/or the *Minimum Downlink Power IEs*, the Node B shall apply the values in the new configuration for other timeslots.]
- [FDD – If the *RL Information IE* contains the *Transmission Gap Pattern Sequence Code Information IE* in the *DL Code Information IE* for any of the allocated DL Channelisation Codes, the Node B shall apply the alternate scrambling code as indicated whenever the downlink compressed mode method SF/2 is active in the new configuration.]
- [1.28Mcps TDD – If the *RL Information IE* contains the *Uplink Synchronisation Parameters LCR IE*, the Node B shall use the indicated values of *Uplink Synchronisation Stepsize IE* and *Uplink Synchronisation Frequency IE* when evaluating the timing of the UL synchronisation.]

#### Signalling Bearer Re-arrangement:

If the RADIO LINK RECONFIGURATION REQUEST message includes the *Signalling Bearer Request Indicator IE*, the Node B shall, if supported, allocate a new Communication Control Port for the control of the Node B Communication Context and include the *Target Communication Control Port ID IE* in the RADIO LINK RECONFIGURATION RESPONSE message.

#### HS-DSCH Setup:

If the *HS-DSCH Information IE* is present in the RADIO LINK RECONFIGURATION REQUEST message, then:

- The Node B shall setup the requested HS-PDSCH resources on the Serving HS-DSCH Radio Link indicated by the *HS-PDSCH RL ID IE*.
- The Node B shall include the *HARQ Memory Partitioning IE* in the [FDD – *HS-DSCH FDD Information Response IE*] [TDD – *HS-DSCH TDD Information Response IE*] in the RADIO LINK RECONFIGURATION RESPONSE message.
- If the RADIO LINK RECONFIGURATION REQUEST message includes the *MAC-hs Guaranteed Bit Rate IE* for a Priority Queue in the *HS-DSCH MAC-d Flows Information IE* in the *HS-DSCH Information IE*, then the Node B shall use this information to optimise MAC-hs scheduling decisions for the related HSDPA Priority Queue.
- If the RADIO LINK RECONFIGURATION REQUEST message includes the *Discard Timer IE* for a Priority Queue in the *HS-DSCH MAC-d Flows Information IE* in the *HS-DSCH Information IE*, then the Node B shall use this information to discard out-of-date MAC-hs SDUs from the related HSDPA Priority Queue.
- The Node B shall include the *HS-DSCH Initial Capacity Allocation IE* in the [FDD – *HS-DSCH FDD Information Response IE*] [TDD – *HS-DSCH TDD Information Response IE*] in the RADIO LINK RECONFIGURATION RESPONSE message for every HS-DSCH MAC-d flow being established, if the Node B allows the CRNC to start transmission of MAC-d PDUs before the Node B has allocated capacity on user plane as described in [24].
- [FDD - If the RADIO LINK RECONFIGURATION REQUEST message includes the *HS-SCCH Power Offset IE* in the *HS-DSCH Information IE*, then the Node B may use this value to determine the HS-SCCH power. The HS-SCCH Power Offset should be applied for any HS-SCCH transmission to this UE.]

- [FDD - If the RADIO LINK RECONFIGURATION REQUEST message includes the *Measurement Power Offset* IE in the *HS-DSCH Information* IE, then the Node B shall use the measurement power offset as described in ref [10], subclause 6A.2.]
- [FDD - The Node B shall allocate HS-SCCH codes corresponding to the HS-DSCH and include the *HS-SCCH Specific Information Response* IE in the *HS-DSCH FDD Information Response* IE in the RADIO LINK RECONFIGURATION RESPONSE message.]
- [TDD - The Node B shall allocate HS-SCCH parameters corresponding to the HS-DSCH and include the [3.84Mcps TDD - *HS-SCCH Specific Information Response* IE] [1.28Mcps TDD - *HS-SCCH Specific Information Response LCR* IE] in the *HS-DSCH TDD Information Response* IE in the RADIO LINK RECONFIGURATION RESPONSE message.]

#### **Intra-Node B Serving HS-DSCH Radio Link Change:**

If the RADIO LINK RECONFIGURATION REQUEST message includes the *HS-PDSCH RL ID* IE, this indicates the new Serving HS-DSCH Radio Link:

- The Node B shall release the HS-PDSCH resources on the old Serving HS-DSCH Radio Link and setup the HS-PDSCH resources on the new Serving HS-DSCH Radio Link.
- The Node B may include the *HARQ Memory Partitioning* IE in the [FDD – *HS-DSCH FDD Information Response* IE] [TDD – *HS-DSCH TDD Information Response* IE] in the RADIO LINK RECONFIGURATION RESPONSE message.
- [FDD – The Node B shall allocate HS-SCCH codes corresponding to the HS-DSCH and include the *HS-SCCH Specific Information Response* IE in the *HS-DSCH FDD Information Response* IE in the RADIO LINK RECONFIGURATION RESPONSE message.]
- [TDD – The Node B shall allocate HS-SCCH parameters corresponding to the HS-DSCH and include the [3.84Mcps TDD – *HS-SCCH Specific Information Response* IE] [1.28Mcps TDD – *HS-SCCH Specific Information Response LCR* IE] in the *HS-DSCH TDD Information Response* IE in the RADIO LINK RECONFIGURATION RESPONSE message.]

#### **HS-DSCH Modification:**

If the RADIO LINK RECONFIGURATION REQUEST message includes the *HS-DSCH Information To ModifyUnsynchronised* IE and if the Serving HS-DSCH Radio Link is in the Node B, then:

- The Node B shall include the *HS-DSCH Initial Capacity Allocation* IE for every HS-DSCH MAC-d flow being modified for which a new transport bearer was requested with the *Transport Bearer Request Indicator* IE, if the Node B allows the CRNC to start transmission of MAC-d PDUs before the Node B has allocated capacity on user plane as described in [32].
- If the RADIO LINK RECONFIGURATION REQUEST message includes the *MAC-hs Guaranteed Bit Rate* IE in the *HS-DSCH Information To ModifyUnsynchronised* IE, the Node B shall use this information to optimise MAC-hs scheduling decisions for the related HSDPA Priority Queue.
- If the RADIO LINK RECONFIGURATION REQUEST message includes the *Discard Timer* IE in the *HS-DSCH Information* IE, then the Node B shall use this information to discard out-of-date MAC-hs SDUs from the related HSDPA Priority Queue.
- [FDD - If the RADIO LINK RECONFIGURATION REQUEST message includes the *ACK Power Offset* IE, the *NACK Power Offset* IE or the *CQI Power Offset* IE in the *HS-DSCH Information To ModifyUnsynchronised* IE, then the Node B shall use the indicated ACK Power Offset, the NACK Power Offset or the CQI Power Offset in the new configuration.]
- [FDD - If the *HS-SCCH Power Offset* IE is included in the *HS-DSCH Information To ModifyUnsynchronised* IE, the Node B may use this value to determine the HS-SCCH power. The HS-SCCH Power Offset should be applied for any HS-SCCH transmission to this UE.]
- [TDD – If the RADIO LINK RECONFIGURATION REQUEST message includes the *TDD ACK NACK Power Offset* IE in the *HS-DSCH Information To ModifyUnsynchronised* IE, the Node B shall use the indicated power offset in the new configuration.]

**HS-DSCH MAC-d Flow Addition/Deletion:**

If the RADIO LINK RECONFIGURATION REQUEST message includes any *HS-DSCH MAC-d Flows To Add* or *HS-DSCH MAC-d Flows To Delete* IEs and if the Serving HS-DSCH Radio Link is in the Node B, then the Node B shall use this information to add/delete the indicated HS-DSCH MAC-d flows on the Serving HS-DSCH Radio Link. When an HS-DSCH MAC-d flow is deleted, all its associated Priority Queues shall also be removed.

If the RADIO LINK RECONFIGURATION REQUEST message includes an *HS-DSCH MAC-d Flows To Delete* IE requesting the deletion of all remaining HS-DSCH MAC-d flows for the Node B Communication Context, then the Node B shall delete the HS-DSCH configuration from the Node B Communication Context and release any existing HS-PDSCH resources.

If the RADIO LINK RECONFIGURATION REQUEST message includes the *HS-DSCH MAC-d Flows To Add* IE and if the Serving HS-DSCH Radio Link is in the Node B, then:

- The Node B shall include the *HS-DSCH Initial Capacity Allocation* IE in the RADIO LINK RECONFIGURATION RESPONSE message for every HS-DSCH MAC-d flow being added, if the Node B allows the CRNC to start transmission of MAC-d PDUs before the Node B has allocated capacity on user plane as described in [24].
- If the RADIO LINK RECONFIGURATION REQUEST message includes the *MAC-hs Guaranteed Bit Rate* IE in the *HS-DSCH MAC-d Flows To Add* IE, the Node B shall use this information to optimise MAC-hs scheduling decisions for the related HSDPA Priority Queue.
- If the RADIO LINK RECONFIGURATION REQUEST message includes the *Discard Timer* IE in the *HS-DSCH Information* IE, then the Node B shall use this information to discard out-of-date MAC-hs SDUs from the related HSDPA Priority Queue.

**E-DCH Setup:**

If the *E-DCH FDD Information* IE is present in the RADIO LINK RECONFIGURATION REQUEST message:

- The Node B shall setup the requested E-DCH resources on the Radio Links indicated by the *E-DCH RL Indication* IE in the *RL Information* IE.
- If the RADIO LINK RECONFIGURATION REQUEST message includes the *MAC-es Guaranteed Bit Rate* IE in the *E-DCH MAC-d Flows Information* IE, then the Node B shall use this information to optimise MAC-e scheduling decisions.
- If the RADIO LINK RECONFIGURATION REQUEST message includes the *Maximum Number Of Transmissions For E-DCH* IE in the *E-DCH MAC-d Flows Information* IE, then the Node B shall use this information to report if the maximum number of transmissions has elapsed.
- If the *TNL QoS* IE is included for a E-DCH MAC-d flow and if ALCAP is not used, the *TNL QoS* IE may be used by the Node B to determine the transport bearer characteristics to apply in the uplink for the related MAC-d flow.
- The Node B shall include the *E-AGCH And E-RGCH/E-HICH FDD Scrambling Code* IE, the *E-RGCH/E-HICH Channelisation Code* IE and the corresponding *Sequence Number* IEs in the *E-DCH FDD DL Control Channel Information* IE in the RADIO LINK RECONFIGURATION RESPONSE message for every RL indicated by the *E-DCH RL Indication* IE in the *RL Information* IE.
- If the RADIO LINK RECONFIGURATION REQUEST message includes the *Serving E-DCH RL* IE, then the Node B shall allocate an E-RNTI identifier for the corresponding RL and include this E-RNTI identifier and the channelisation code of the corresponding E-AGCH in the *E-DCH FDD DL Control Channel Information* IE in the RADIO LINK RECONFIGURATION RESPONSE message.

**Serving E-DCH Radio Link Change:**

If the RADIO LINK RECONFIGURATION REQUEST message includes the *Serving E-DCH RL* IE, this indicates the new Serving E-DCH Radio Link:

- If the old Serving E-DCH RL is in this Node B, the Node B shall de-allocate the E-AGCH resources of the old Serving E-DCH Radio Link.

- If the New Serving E-DCH RL is in this Node B, the Node B shall allocate an E-RNTI identifier for the new Serving E-DCH Radio Link and include this identifier along with the channelisation code of the corresponding E-AGCH in the E-DCH FDD DL Control Channel Information IE in the RADIO LINK RECONFIGURATION RESPONSE message.

#### **E-DCH Modification:**

If the RADIO LINK RECONFIGURATION REQUEST message includes the E-DCH FDD Information To Modify IE, then:

- If the RADIO LINK RECONFIGURATION REQUEST message includes the Data Description Indicator IE, the Node B shall delete the previous list of DDI values for this Node B Communication Context and use the DDI values indicated in the Data Description Indicator IE in the new configuration.

#### **E-DCH MAC-d Flow Addition/Deletion:**

If the RADIO LINK RECONFIGURATION REQUEST message includes any E-DCH MAC-d Flows To Add or E-DCH MAC-d Flows To Delete IEs, then the Node B shall use this information to add/delete the indicated E-DCH MAC-d flows. When an E-DCH MAC-d flow is deleted, all its associated configuration data shall also be removed.

If the RADIO LINK RECONFIGURATION REQUEST message includes an E-DCH MAC-d Flows To Delete IE requesting the deletion of all remaining E-DCH MAC-d flows for the UE Context, then the Node B shall delete the E-DCH configuration from the Node B Communication Context and release the E-DCH resources.

If the RADIO LINK RECONFIGURATION REQUEST message includes the E-DCH MAC-d Flows To Add IE, then:

- If the RADIO LINK RECONFIGURATION REQUEST message includes the MAC-es Guaranteed Bit Rate IE in the E-DCH MAC-d Flows To Add IE, the Node B shall use this information to optimise MAC-e scheduling decisions.
- If the RADIO LINK RECONFIGURATION REQUEST message includes the the Maximum Number Of Transmissions For E-DCH IE in the E-DCH MAC-d Flows To Add IE, then the Node B shall use this information to report if the maximum number of transmissions has elapsed.

#### **General**

If the RADIO LINK RECONFIGURATION REQUEST message includes the *Transport Layer Address* IE and *Binding ID* IEs in the *HS-DSCH Information* IE, *HS-DSCH Information To Modify Unsynchronised* IE, *HS-DSCH MAC-d Flows To Add* IE, *E-DCH Information* IE, *E-DCH Information To Modify* IE, *E-DCH MAC-d Flows To Add* IE or in the *RL Specific DCH Information* IE, the Node B may use the transport layer address and the binding identifier received from the CRNC when establishing a transport bearer for any Transport Channel or ~~HS-DSCH~~ MAC-d flow being added or any Transport Channel or ~~HS-DSCH~~ MAC-d flow being modified for which a new transport bearer was requested with the *Transport Bearer Request Indicator* IE.

If the requested modifications are allowed by the Node B, the Node B has successfully allocated the required resources, and changed to the new configuration, it shall respond to the CRNC with the RADIO LINK RECONFIGURATION RESPONSE message.

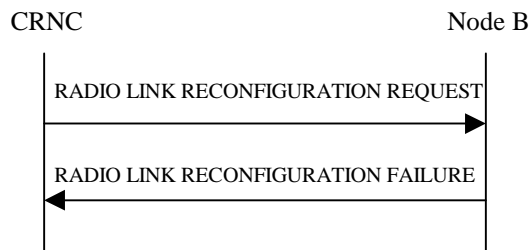
The Node B shall include in the RADIO LINK RECONFIGURATION RESPONSE message the *Transport Layer Address* IE and the *Binding ID* IE for any Transport Channel or ~~HS-DSCH~~ MAC-d flow being added or any Transport Channel or ~~HS-DSCH~~ MAC-d flow being modified for which a new transport bearer was requested with the *Transport Bearer Request Indicator* IE. The detailed frame protocol handling during transport bearer replacement is described in [16], subclause 5.10.1.

In the case of a set of co-ordinated DCHs requiring a new transport bearer on the Iub interface, the *Transport Layer Address* IE and the *Binding ID* IE in the *DCH Information Response* IE shall be included only for one of the DCH in the set of coordinated DCHs.

In the case of a Radio Link being combined with another Radio Link within the Node B, the *Transport Layer Address* IE and the *Binding ID* IE in the *DCH Information Response* IE shall be included only for one of the combined Radio Links.

In the case of a signalling bearer re-arrangement, the new Communication Control Port shall be used once the Node B has sent the RADIO LINK RECONFIGURATION RESPONSE message via the old Communication Control Port.

### 8.3.5.3 Unsuccessful Operation



**Figure 35: Unsyncronised Radio Link Reconfiguration procedure, Unsuccessful Operation**

If the Node B cannot allocate the necessary resources for all the new DCHs of one set of co-ordinated DCHs requested to be set-up, it shall regard the Unsyncronised Radio Link Reconfiguration procedure as having failed.

If the requested Unsyncronised Radio Link Reconfiguration procedure fails for one or more Radio Link(s), the Node B shall send the RADIO LINK RECONFIGURATION FAILURE message to the CRNC, indicating the reason for failure.

Typical cause values are as follows:

#### Radio Network Layer Cause

- CM not supported

#### Transport Layer Cause

- Transport Resources Unavailable

#### Miscellaneous Cause

- O&M Intervention
- Control processing overload
- HW failure

### 8.3.5.4 Abnormal Conditions

If only a subset of all the DCHs belonging to a set of co-ordinated DCHs is requested to be deleted, the Node B shall regard the Unsyncronised Radio Link Reconfiguration procedure as having failed and shall send the RADIO LINK RECONFIGURATION FAILURE message to the CRNC.

[FDD – If the *RL Information* IE contains the *DL Code Information* IE and this IE includes *DL Scrambling Code* and *FDD DL Channelisation Code Number* IEs not matching the DL Channelisation code(s) already allocated to the Radio Link identified by *RL ID* IE, then the Node B shall consider the Unsyncronised Radio Link Reconfiguration procedure as having failed and it shall send the RADIO LINK RECONFIGURATION FAILURE message to the CRNC.

If more than one DCH of a set of co-ordinated DCHs has the *QE-Selector* IE set to "selected" [TDD – or no DCH of a set of co-ordinated DCHs has the *QE-Selector* IE set to "selected"], the Node B shall regard the Unsyncronised Radio Link Reconfiguration Preparation procedure as failed and shall respond with a RADIO LINK RECONFIGURATION FAILURE message.

If the RADIO LINK RECONFIGURATION REQUEST message includes a *DCHs To Modify* IE or *DCHs To Add* IE with multiple *DCH Specific Info* IEs, and if the DCHs in the *DCHs To Modify* IE or *DCHs To Add* IE do not have the same *Transmission Time Interval* IE in the *Semi-Static Transport Format Information* IE, then the Node B shall reject the procedure using the RADIO LINK RECONFIGURATION FAILURE message.

[FDD - If the *RL Information* IE includes the *DL Reference Power* IEs, but the power balancing is not active in the indicated RL(s), the Node B shall regard the Unsyncronised Radio Link Reconfiguration procedure as having failed and the Node B shall respond the RADIO LINK RECONFIGURATION FAILURE message with the cause value "Power Balancing status not compatible".]

[FDD - If the power balancing is active with the Power Balancing Adjustment Type of the Node B Communication Context set to "Common" in the existing RL(s) but the *RL Information* IE includes more than one *DL Reference Power* IEs, the Node B shall regard the Unsynchronised Radio Link Reconfiguration procedure as having failed and the Node B shall respond the RADIO LINK RECONFIGURATION FAILURE message with the cause value "Power Balancing status not compatible".]

[FDD – If the RADIO LINK RECONFIGURATION REQUEST message includes the *Length Of TFCI2* IE but the *TFCI Signalling Option* IE is set to "Normal", then the Node B shall reject the procedure using the RADIO LINK RECONFIGURATION FAILURE message.]

[FDD – If the RADIO LINK RECONFIGURATION REQUEST message does not include the *Length Of TFCI2* IE but the *Split Type* IE is set to "Logical", then the Node B shall reject the procedure using the RADIO LINK RECONFIGURATION FAILURE message.]

[FDD – If the RADIO LINK RECONFIGURATION REQUEST message includes the *Split Type* IE set to the value "Hard" and the *Length Of TFCI2* IE set to the value "1", "2", "5", "8", "9" or "10", then the Node B shall reject the procedure using the RADIO LINK RECONFIGURATION FAILURE message.]

If the RADIO LINK RECONFIGURATION REQUEST message contains the *Transport Layer Address* IE or the *Binding ID* IE when establishing a transport bearer for any Transport Channel or HS-DSCH MAC-d flow being added or any Transport Channel or HS-DSCH MAC-d flow being modified for which a new transport bearer was requested with the *Transport Bearer Request Indicator* IE, and not both are present for a transport bearer intended to be established, the Node B shall reject the procedure using the RADIO LINK RECONFIGURATION FAILURE message.

If the RADIO LINK RECONFIGURATION REQUEST message contains any of the *HS-DSCH Information To Modify* IE, *HS-DSCH MAC-d Flows To Add* IE or *HS-DSCH MAC-d Flows To Delete* IE in addition to the *HS-DSCH Information* IE, the Node B shall reject the procedure using the RADIO LINK RECONFIGURATION FAILURE message.

If the RADIO LINK RECONFIGURATION REQUEST message contains any of the *HS-DSCH Information To Modify* IE, *HS-DSCH MAC-d Flows To Add* IE, *HS-DSCH MAC-d Flows To Delete* IE or *HS-PDSCH RL ID* IE and the Serving HS-DSCH Radio Link is not in the Node B, the Node B shall reject the procedure using the RADIO LINK RECONFIGURATION FAILURE message.

If the RADIO LINK RECONFIGURATION REQUEST message includes the *HS-DSCH Information* IE and does not include the *HS-PDSCH RL-ID* IE, the Node B shall reject the procedure using the RADIO LINK RECONFIGURATION FAILURE message.

If the RADIO LINK RECONFIGURATION REQUEST message includes the *HS-PDSCH RL-ID* IE indicating a Radio Link not existing in the Node B Communication Context, the Node B shall reject the procedure using the RADIO LINK RECONFIGURATION FAILURE message.

If the RADIO LINK RECONFIGURATION REQUEST message contains any of the *HS-DSCH Information* IE, *HS-DSCH Information To Modify* IE, or *HS-DSCH MAC-d Flows To Add* IE and if in the new configuration the Priority Queues associated with the same *HS-DSCH MAC-d Flow ID* IE have the same *Scheduling Priority Indicator* IE value, the Node B shall reject the procedure using the RADIO LINK RECONFIGURATION FAILURE message.

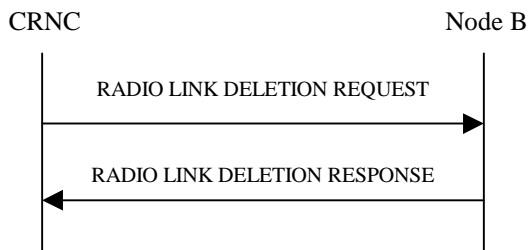
## 8.3.6 Radio Link Deletion

### 8.3.6.1 General

The Radio Link Deletion procedure is used to release the resources in a Node B for one or more established radio links towards a UE.

The Radio Link Deletion procedure may be initiated by the CRNC at any time when the Node B Communication Context exists.

### 8.3.6.2 Successful Operation



**Figure 36: Radio Link Deletion procedure, Successful Operation**

The procedure is initiated with a RADIO LINK DELETION REQUEST message sent from the CRNC to the Node B using the Communication Control Port assigned to the concerned Node B Communication Context.

Upon receipt of this message, the Node B shall delete the radio link(s) identified by the *RL ID IE*, *Node B Communication Context ID IE* and *CRNC Communication Context ID IE* and release all associated resources and respond to the CRNC with a RADIO LINK DELETION RESPONSE message. [FDD – Resources associated with the TFCI2 bearer shall be released only if all the RLs in the Node B Communication Context are deleted].

[FDD – After deletion of the RL(s), the UL out-of-sync algorithm defined in ref. [10] shall for each of the remaining RL Set(s) use the maximum value of the parameters *N\_OUTSYNC\_IND* and *T\_RLFAILURE* that are configured in the cells supporting the radio links of the RL Set and the UL in-sync algorithm defined in ref. [10] shall for each of the remaining RL Set(s) use the minimum value of the parameters *N\_INSYNC\_IND* that are configured in the cells supporting the radio links of the RL Set.]

### 8.3.6.3 Unsuccessful Operation

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### 8.3.6.4 Abnormal Conditions

If the RL indicated by the *RL ID IE*, *Node B Communication Context ID IE* and *CRNC Communication Context ID IE* does not exist, the Node B shall respond with the RADIO LINK DELETION RESPONSE message and use the *CRNC Communication Context ID IE* received in the RADIO LINK DELETION REQUEST message.

## 8.3.7 Downlink Power Control [FDD]

### 8.3.7.1 General

The purpose of this procedure is to balance the DL transmission powers of one or more Radio Links used for the related UE-UTRAN connection within the Node B. The Downlink Power Control procedure may be initiated by the CRNC at any time when the Node B Communication Context exists, irrespective of other ongoing CRNC initiated dedicated NBAP procedures towards this Node B Communication Context. The only exception occurs when the CRNC has requested the deletion of the last RL via this Node B, in which case the Downlink Power Control procedure shall no longer be initiated.

### 8.3.7.2 Successful Operation



**Figure 37: Downlink Power Control procedure, Successful Operation**



The procedure is initiated by the CRNC sending a DL POWER CONTROL REQUEST message to the Node B using the Communication Control Port assigned to the concerned Node B Communication Context.

The *Power Adjustment Type* IE defines the characteristic of the power adjustment.

If the value of the *Power Adjustment Type* IE is "Common", the Power Balancing Adjustment Type of the Node B Communication Context shall be set to "Common". As long as the Power Balancing Adjustment Type of the Node B Communication Context is set to "Common", the Node B shall perform the power adjustment (see below) for all existing and future radio links associated with the context identified by the *Node B Communication Context ID* IE and use a common DL reference power level.

If the value of the *Power Adjustment Type* IE is "Individual", the Power Balancing Adjustment Type of the Node B Communication Context shall be set to "Individual". The Node B shall perform the power adjustment (see below) for all radio links addressed in the message using the given DL Reference Powers per RL. If the Power Balancing Adjustment Type of the Node B Communication Context was set to "Common" before this message was received, power balancing on all radio links not addressed by the DL POWER CONTROL REQUEST message shall remain to be executed in accordance with the existing power balancing parameters which are now considered RL individual parameters. Power balancing will not be started on future radio links without a specific request.

If the value of the *Power Adjustment Type* IE is "None", the Power Balancing Adjustment Type of the Node B Communication Context shall be set to "None" and the Node B shall suspend on going power adjustments for all radio links for the Node B Communication Context.

If the *Inner Loop DL PC Status* IE is present and set to "Active", the Node B shall activate inner loop DL power control for all radio links for the Node B Communication Context. If the *Inner Loop DL PC Status* IE is present and set to "Inactive", the Node B shall deactivate inner loop DL power control for all radio links for the Node B Communication Context according to ref. [10].

### Power Adjustment

The power balancing adjustment shall be superimposed on the inner loop power control adjustment (see ref. [10]) if activated. The power balancing adjustment shall be such that:

$$\sum P_{bal} = (1 - r)(P_{ref} + P_{P-CPICH} - P_{init}) \text{ with an accuracy of } \pm 0.5 \text{ dB}$$

where the sum is performed over an adjustment period corresponding to a number of frames equal to the value of the *Adjustment Period* IE,  $P_{ref}$  is the value of the *DL Reference Power* IE,  $P_{P-CPICH}$  is the power used on the primary CPICH,  $P_{init}$  is the code power of the last slot of the previous adjustment period and  $r$  is given by the *Adjustment Ratio* IE. If the last slot of the previous adjustment period is within a transmission gap due to compressed mode,  $P_{init}$  shall be set to the same value as the code power of the slot just before the transmission gap.

The adjustment within one adjustment period shall in any case be performed with the constraints given by the *Max Adjustment Step* IE and the DL TX power range set by the CRNC.

The power adjustments shall be started at the first slot of a frame with CFN modulo the value of *Adjustment Period* IE equal to 0 and shall be repeated for every adjustment period and shall be restarted at the first slot of a frame with CFN=0, until a new DL POWER CONTROL REQUEST message is received or the RL is deleted.

### 8.3.7.3 Abnormal Conditions

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## 8.3.8 Dedicated Measurement Initiation

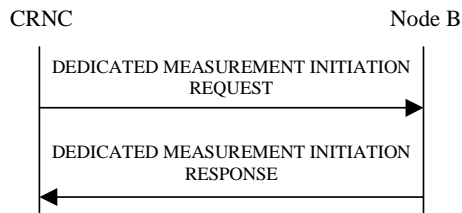
### 8.3.8.1 General

This procedure is used by a CRNC to request the initiation of measurements on dedicated resources in a Node B.

The Dedicated Measurement Initiation procedure shall not be initiated if a Prepared Reconfiguration exists, as defined in subclause 3.1 except when the *Node B Communication Context ID* IE in the DEDICATED MEASUREMENT INITIATION REQUEST message is set to the reserved value "All NBCC".

If the *Node B Communication Context ID IE* in the DEDICATED MEASUREMENT INITIATION REQUEST message is set to the reserved value "All NBCC", the Dedicated Measurement Initiation procedure may be initiated by the CRNC at any time when the Node B Communication Context exists.

### 8.3.8.2 Successful Operation



**Figure 38: Dedicated Measurement Initiation procedure, Successful Operation**

The procedure is initiated with a DEDICATED MEASUREMENT INITIATION REQUEST message sent from the CRNC to the Node B using the Communication Control Port assigned to the Node B Communication Context.

Upon reception, the Node B shall initiate the requested measurement according to the parameters given in the DEDICATED MEASUREMENT INITIATION REQUEST message. Unless specified below the meaning of the parameters are given in other specifications.

If the *Node B Communication Context ID IE* equals the reserved value "All NBCC", this measurement request shall apply for all current and future Node B Communication Contexts controlled via the Communication Control Port on which the DEDICATED MEASUREMENT INITIATION REQUEST message was received. Otherwise, this measurement request shall apply for the requested Node B Communication Context ID only.

If the *Node B Communication Context ID IE* equals the reserved value "All NBCC", the measurement request shall be treated as a single measurement, despite applying to multiple contexts. This means that it may only be terminated or failed on "All NBCC".

If the *Node B Communication Context ID IE* equals the reserved value "All NBCC", the measurement shall be initiated only for those Node B Communication Contexts handling a mode (FDD, 3.84Mcps TDD or 1.28Mcps TDD) for which the concerned measurement is specified in [4] and [5]. The initiation of the measurement for a Node B Communication Context may be delayed until the Reconfiguration CFN has elapsed if either a Prepared Reconfiguration exists or a Prepared Reconfiguration no longer exists but the Reconfiguration CFN has not yet elapsed.

If the Dedicated Measurement Object Type is indicated as being "RL" in the DEDICATED MEASUREMENT INITIATION REQUEST message, measurement results shall be reported for all indicated Radio Links.

[FDD – If the Dedicated Measurement Object Type is indicated as being "RLS" in the DEDICATED MEASUREMENT INITIATION REQUEST message, measurement results shall be reported for all indicated Radio Link Sets.]

[FDD - If the Dedicated Measurement Object Type is indicated as being "ALL RL" in the DEDICATED MEASUREMENT INITIATION REQUEST message, measurement results shall be reported for all current and future Radio Links within the Node B Communication Context.]

[TDD - If the Dedicated Measurement Object Type is indicated as being "ALL RL" in the DEDICATED MEASUREMENT INITIATION REQUEST message, measurement results shall be reported for one existing DPCH per CCTrCH in each used time slot of current and future Radio Links within the Node B Communication Context, provided the measurement type is applicable to the respective DPCH.]

[FDD – If the Dedicated Measurement Object Type is indicated as being "ALL RLS" in the DEDICATED MEASUREMENT INITIATION REQUEST message, measurement results shall be reported for all existing and future Radio Link Sets within the Node B Communication Context.]

[TDD – If the *DPCH ID IE* is provided within the RL Information, the measurement request shall apply for the requested physical channel individually. If no *DPCH ID IE*, *HS-SICH ID IE* and no *PUSCH Information IE* is provided

within the RL Information, the measurement request shall apply for one existing physical channel per CCTrCH in each used time slot of the Radio Link, provided the measurement type is applicable to this physical channel.]

[TDD – If the *PUSCH Information* IE is provided within the RL Information, the measurement request shall apply for the requested physical channel individually.]

[TDD – If the *HS-SICH Information* IE is provided within the RL Information, the measurement request shall apply for the requested physical channel individually.]

[TDD - If the *Dedicated Measurement Type* IE is set to "HS-SICH reception quality ", the Node B shall initiate measurements of the failed, missed and total HS-SICH transmissions on all of the HS-SICH assigned to this Node B Communication Context. If either the failed or missed HS-SICH transmission satisfies the requested report characteristics, the Node B shall report the result of both failed and missed transmission measurements along with the total number of transmissions.]

If the *CFN Reporting Indicator* IE is set to "FN Reporting Required", the *CFN* IE shall be included in the DEDICATED MEASUREMENT REPORT message or in the DEDICATED MEASUREMENT INITIATION RESPONSE message, the latter only in the case the *Report Characteristics* IE is set to "On Demand". The reported CFN shall be the CFN at the time when the measurement value was reported by the layer 3 filter, referred to as point C in the measurement model [25].

[FDD – If the *Number Of Reported Cell Portions* IE is included in the DEDICATED MEASUREMENT INITIATION REQUEST message, the value shall be used to determine how many *Cell Portion ID* IEs and *SIR Value* IEs shall be included in *Best Cell Portions* IE in the DEDICATED MEASUREMENT REPORT message or in the DEDICATED MEASUREMENT INITIATION RESPONSE message.]

### Report characteristics

The *Report Characteristics* IE indicates how the reporting of the measurement shall be performed. See also Annex B.

If the *Report Characteristics* IE is set to "On Demand" and if the *CFN* IE is not provided, the Node B shall return the result of the measurement immediately. If the *CFN* IE is provided, it indicates the frame for which the measurement value shall be provided. The provided measurement value shall be the one reported by the layer 3 filter, referred to as point C in the measurement model [25].

If the *Report Characteristics* IE is set to "Periodic", the Node B shall periodically initiate the Dedicated Measurement Report procedure for this measurement, with the requested report frequency. If the *CFN* IE is provided, it indicates the frame for which the first measurement value of a periodic reporting shall be provided. The provided measurement value shall be the one reported by the layer 3 filter, referred to as point C in the measurement model [25].

If the *Report Characteristics* IE is set to "Event A", the Node B shall initiate the Dedicated Measurement Reporting procedure when the measured entity rises above the requested threshold and stays there for the requested hysteresis time. If the *Measurement Hysteresis Time* IE is not included, the Node B shall use the value zero for the hysteresis time.

If the *Report Characteristics* IE is set to "Event B", the Node B shall initiate the Dedicated Measurement Reporting procedure when the measured entity falls below the requested threshold and stays there for the requested hysteresis time. If the *Measurement Hysteresis Time* IE is not included, the Node B shall use the value zero for the hysteresis time.

If the *Report Characteristics* IE is set to "Event C", the Node B shall initiate the Dedicated Measurement Reporting procedure when the measured entity rises by an amount greater than the requested threshold within the requested time. After having reported this type of event, the next C event reporting for the same measurement cannot be initiated before the rising time specified by the *Measurement Change Time* IE has elapsed since the previous event reporting.

If the *Report Characteristics* IE is set to "Event D", the Node B shall initiate the Dedicated Measurement Reporting procedure when the measured entity falls by an amount greater than the requested threshold within the requested time. After having reported this type of event, the next D event reporting for the same measurement cannot be initiated before the falling time specified by the *Measurement Change Time* IE has elapsed since the previous event reporting.

If the *Report Characteristics* IE is set to "Event E", the Node B shall initiate the Dedicated Measurement Reporting procedure when the measured entity rises above the 'Measurement Threshold 1' and stays there for the 'Measurement Hysteresis Time' (Report A). When the conditions for Report A are met and the *Report Periodicity* IE is provided, the Node B shall also initiate the Dedicated Measurement Reporting procedure periodically. If the conditions for Report A have been met and the measured entity falls below the 'Measurement Threshold 2' and stays there for the 'Measurement Hysteresis Time', the Node B shall initiate the Dedicated Measurement Reporting procedure (Report B) as well as terminate any corresponding periodic reporting. If the *Measurement Threshold 2* IE is not present, the Node B shall use

the value of the *Measurement Threshold 1* IE instead. If the *Measurement Hysteresis Time* IE is not included, the Node B shall use the value zero as hysteresis times for both Report A and Report B.

If the *Report Characteristics* IE is set to "Event F", the Node B shall initiate the Dedicated Measurement Reporting procedure when the measured entity falls below the 'Measurement Threshold 1' and stays there for the 'Measurement Hysteresis Time' (Report A). When the conditions for Report A are met and the *Report Periodicity* IE is provided, the Node B shall also initiate the Dedicated Measurement Reporting procedure periodically. If the conditions for Report A have been met and the measured entity rises above the 'Measurement Threshold 2' and stays there for the 'Measurement Hysteresis Time', the Node B shall initiate the Dedicated Measurement Reporting procedure (Report B) as well as terminate any corresponding periodic reporting. If the *Measurement Threshold 2* IE is not present, the Node B shall use the value of the *Measurement Threshold 1* IE instead. If the *Measurement Hysteresis Time* IE is not included, the Node B shall use the value zero as hysteresis times for both Report A and Report B.

If the *Report Characteristics* IE is not set to "On Demand", the Node B is required to perform reporting for a dedicated measurement object, in accordance with the conditions provided in the DEDICATED MEASUREMENT INITIATION REQUEST message, as long as the object exists. If no dedicated measurement object for which a measurement is defined exists anymore, the Node B shall terminate the measurement locally, i.e. without reporting this to the CRNC.

If at the start of the measurement, the reporting criteria are fulfilled for any of Event A, Event B, Event E or Event F, the Node B shall initiate the Dedicated Measurement Reporting procedure immediately, and then continue with the measurements as specified in the DEDICATED MEASUREMENT INITIATION REQUEST message.

#### Higher layer filtering

The *Measurement Filter Coefficient* IE indicates how filtering of the measurement values shall be performed before measurement event evaluation and reporting.

The averaging shall be performed according to the following formula.

$$F_n = (1 - a) \cdot F_{n-1} + a \cdot M_n$$

The variables in the formula are defined as follows

$F_n$  is the updated filtered measurement result

$F_{n-1}$  is the old filtered measurement result

$M_n$  is the latest received measurement result from physical layer measurements, the unit used for  $M_n$  is the same unit as the reported unit in the DEDICATED MEASUREMENT INITIATION RESPONSE, DEDICATED MEASUREMENT REPORT messages or the unit used in the event evaluation (i.e. same unit as for  $F_n$ )

$a = 1/2^{(k/2)}$ , where  $k$  is the parameter received in the *Measurement Filter Coefficient* IE. If the *Measurement Filter Coefficient* IE is not present,  $a$  shall be set to 1 (no filtering)

In order to initialise the averaging filter,  $F_0$  is set to  $M_1$  when the first measurement result from the physical layer measurement is received.

#### Measurement Recovery Behavior:

If the *Measurement Recovery Behavior* IE is included in the COMMON MEASUREMENT INITIATION REQUEST message, the Node B shall, if Measurement Recovery Behavior is supported, include the *Measurement Recovery Support Indicator* IE in the COMMON MEASUREMENT INITIATION RESPONSE message and perform the Measurement Recovery Behavior as described in subclause 8.3.9.2.

#### Response message

If the Node B was able to initiate the measurement requested by the CRNC, it shall respond with the DEDICATED MEASUREMENT INITIATION RESPONSE message using the Communication Control Port assigned to the Node B Communication Context. The message shall include the same Measurement ID that was used in the measurement request. The DEDICATED MEASUREMENT INITIATION RESPONSE message shall be sent even if the initiation is delayed for some Node B Communication Contexts due to an existing Prepared Reconfiguration or that the Reconfiguration CFN has not yet elapsed.

Only in the case where the *Report Characteristics* IE is set to "On Demand", the DEDICATED MEASUREMENT INITIATION RESPONSE message shall include the *Dedicated Measurement Object Type* IE containing the

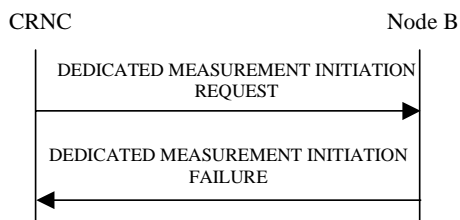
measurement result. [TDD – In the case that the measurement was performed on a particular HS-SICH, the Node B shall include the *HS-SICH ID* IE that indicates which HS-SICH was measured.]

In the case where the *Node B Communication Context ID* IE is set to "All NBCC", the *CRNC Communication Context ID* IE in the DEDICATED MEASUREMENT INITIATION RESPONSE shall be set to the value "All CRNCCC", which is reserved for this purpose.

**Interaction with Reset Procedure:**

If a measurement has been requested with the *Node B Communication Context ID* IE set to "All NBCC", the Node B shall terminate the measurement locally if either the CRNC or the Node B initiates the Reset procedure for the relevant Communication Control Port or the entire Node B.

**8.3.8.3 Unsuccessful Operation**



**Figure 39: Dedicated Measurement Initiation procedure: Unsuccessful Operation**

If the requested measurement cannot be initiated, the Node B shall send a DEDICATED MEASUREMENT INITIATION FAILURE message using the Communication Control Port assigned to the Node B Communication Context. The message shall include the same Measurement ID that was used in the DEDICATED MEASUREMENT INITIATION REQUEST message and the *Cause* IE set to an appropriate value.

In the case where the *Node B Communication Context ID* IE is set to "All NBCC" the *CRNC Communication Context ID* IE in the DEDICATED MEASUREMENT INITIATION FAILURE shall be set to the value "All CRNCCC", which is reserved for this purpose.

Typical cause values are as follows:

**Radio Network Layer cause**

- Measurement not supported for the object
- Measurement Temporarily not Available

**Miscellaneous Cause**

- O&M Intervention
- Control processing overload
- HW failure

**8.3.8.4 Abnormal Conditions**

The allowed combinations of the Dedicated Measurement Type and Report Characteristics Type are shown in the table below marked with "X". For not allowed combinations, the Node B shall regard the Dedicated Measurement Initiation procedure as failed.

**Table 4: Allowed Dedicated Measurement Type and Report Characteristics Type combinations**

Dedicated Measurement Type	Report Characteristics Type								
	On Demand	Periodic	Event A	Event B	Event C	Event D	Event E	Event F	On Modification
SIR	X	X	X	X	X	X	X	X	
SIR Error	X	X	X	X	X	X	X	X	
Transmitted Code Power	X	X	X	X	X	X	X	X	
RSCP	X	X	X	X	X	X	X	X	
Rx Timing Deviation	X	X	X	X			X	X	
Round Trip Time	X	X	X	X	X	X	X	X	
Rx Timing Deviation LCR	X	X	X	X			X	X	
HS-SICH reception quality	X	X	X	X			X	X	
Best Cell Portions	X	X							
Angle Of Arrival LCR	X	X							

If the Dedicated Measurement Type received in the *Dedicated Measurement Type* IE is not defined in ref. [4] or [5] to be measured on the Dedicated Measurement Object Type received in the DEDICATED MEASUREMENT INITIATION REQUEST message, the Node B shall regard the Dedicated Measurement Initiation procedure as failed.

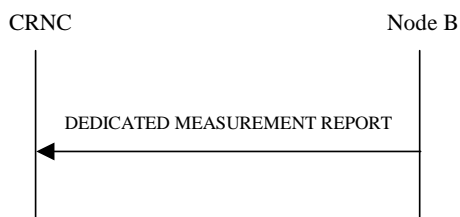
If the *CFN* IE is included in the DEDICATED MEASUREMENT INITIATION REQUEST message and the *Report Characteristics* IE is other than "Periodic" or "On Demand", the Node B shall regard the Dedicated Measurement Initiation procedure as failed.

### 8.3.9 Dedicated Measurement Reporting

#### 8.3.9.1 General

This procedure is used by the Node B to report the result of measurements requested by the CRNC with the Dedicated Measurement Initiation procedure. The Node B may initiate the Dedicated Measurement Reporting procedure at any time after establishing a Radio Link, as long as the Node B Communication Context exists.

#### 8.3.9.2 Successful Operation



**Figure 40: Dedicated Measurement Reporting procedure, Successful Operation**

If the requested measurement reporting criteria are met, the Node B shall initiate the Dedicated Measurement Reporting procedure. The DEDICATED MEASUREMENT REPORT message shall use the Communication Control Port assigned to the Node B Communication Context. If the measurement was initiated (by the Dedicated Measurement Initiation procedure) for multiple dedicated measurement objects, the Node B may include measurement values for multiple objects in the DEDICATED MEASUREMENT REPORT message. Unless specified below, the meaning of the parameters are given in other specifications.

The *Measurement ID* IE shall be set to the Measurement ID provided by the CRNC when initiating the measurement with the Dedicated Measurement Initiation procedure.

[TDD – In the case that the measurement was performed on a particular HS-SICH, the Node B shall include the *HS-SICH ID* IE that indicates which HS-SICH was measured.]

If the achieved measurement accuracy does not fulfil the given accuracy requirement (see ref.[22] and [23]) or the measurement is temporarily not available in case Measurement Recovery Behavior is supported, the Measurement not available shall be reported. If the Node B was configured to perform the Measurement Recovery Behavior, the Node B shall indicate Measurement Available to the CRNC when the achieved measurement accuracy again fulfils the given accuracy requirement (see ref. [22] and [23]) and include the *Measurement Recovery Report Indicator* IE in the COMMON MEASUREMENT REPORT message if the requested measurement reporting criteria are not met.

### 8.3.9.3 Abnormal Conditions

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## 8.3.10 Dedicated Measurement Termination

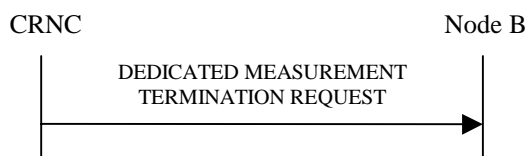
### 8.3.10.1 General

This procedure is used by the CRNC to terminate a measurement previously requested by the Dedicated Measurement Initiation procedure.

The Dedicated Measurement Termination procedure shall not be initiated if a Prepared Reconfiguration exists, as defined in subclause 3.1 except if the measurement was initiated by the Dedicated Measurement Initiation procedure using the reserved value "All NBCC".

If the measurement was initiated by the Dedicated Measurement Initiation procedure using the reserved value "All NBCC", the Dedicated Measurement Termination procedure may be initiated by the CRNC at any time.

### 8.3.10.2 Successful Operation



**Figure 41: Dedicated Measurement Termination procedure, Successful Operation**

This procedure is initiated with a DEDICATED MEASUREMENT TERMINATION REQUEST message, sent from the CRNC to the Node B using the Communication Control Port assigned to the Node B Communication Context.

Upon reception, the Node B shall terminate reporting of dedicated measurements corresponding to the received *Measurement ID* IE.

### 8.3.10.3 Abnormal Conditions

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## 8.3.11 Dedicated Measurement Failure

### 8.3.11.1 General

This procedure is used by the Node B to notify the CRNC that a measurement previously requested by the Dedicated Measurement Initiation procedure can no longer be reported. The Node B is allowed to initiate the DEDICATED MEASUREMENT FAILURE INDICATION message at any time after having sent the RADIO LINK SETUP RESPONSE message, as long as the Node B Communication Context exists.

### 8.3.11.2 Successful Operation



**Figure 42: Dedicated Measurement Failure procedure, Successful Operation**

This procedure is initiated with a DEDICATED MEASUREMENT FAILURE INDICATION message, sent from the Node B to the CRNC using the Communication Control Port assigned to the Node B Communication Context, to inform the CRNC that a previously requested measurement can no longer be reported. The Node B has locally terminated the indicated measurement.

If the failed measurement was initiated with the *Node B Communication Context ID* IE set to the reserved value "All NBCC" and the Node B has terminated the measurement reporting of the measurement corresponding to the Measurement ID indicated in the DEDICATED MEASUREMENT FAILURE INDICATION message, the *CRNC Communication Context ID* IE shall be set to the value "All CRNCCC".

### 8.3.11.3 Abnormal Conditions

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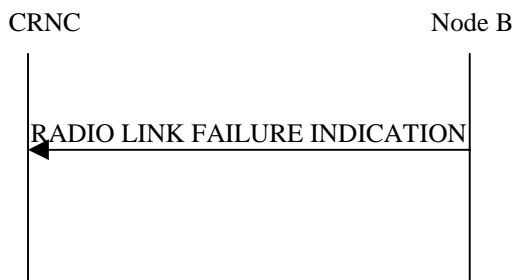
## 8.3.12 Radio Link Failure

### 8.3.12.1 General

This procedure is used by the Node B to indicate a failure in one or more Radio Links [FDD - or Radio Link Sets][TDD or CCTrCHs within a Radio Link].

The Node B may initiate the Radio Link Failure procedure at any time after establishing a Radio Link.

### 8.3.12.2 Successful Operation



**Figure 43: Radio Link Failure procedure, Successful Operation**

When the Node B detects that one or more Radio Link(s) [FDD - or Radio Link Set(s)] [TDD – or CCTrCHs within a Radio Link] are no longer available, it sends the RADIO LINK FAILURE INDICATION message to the CRNC indicating the failed Radio Link(s) or Radio Link Set(s) or CCTrCHs with the most appropriate cause values in the *Cause* IE. The message shall use the Communication Control Port assigned to the concerned Node B Communication Context.

If the failure concerns one or more individual Radio Link(s), the Node B shall indicate the affected Radio Link(s) using the *RL Information* IE. [FDD - If the failure concerns one or more Radio Link Set(s), the Node B shall indicate the affected Radio Link Set(s) using the *RL Set Information* IE.] [TDD – If the failure concerns only the failure of one or more CCTrCHs within a radio link, the Node B shall indicate the affected CCTrCHs using the *CCTrCH ID* IE.]



When the Radio Link Failure procedure is used to notify the loss of UL synchronisation of a [FDD – Radio Link Set] [TDD – Radio Link or CCTrCHs within a Radio Link] on the Uu interface, the RADIO LINK FAILURE INDICATION message shall be sent, with the *Cause* IE set to "Synchronisation Failure", when indicated by the UL out-of-sync algorithm defined in [10] and [21]. [FDD – The algorithms in [10] shall use the maximum value of the parameters N\_OUTSYNC\_IND and T\_RLFailure, and the minimum value of the parameters N\_INSYNC\_IND, that are configured in the cells supporting the radio links of the RL Set.]

[FDD – When the Radio Link Failure procedure is used to indicate permanent failure in one or more Radio Link(s) / Radio Link Set(s) due to the occurrence of an UL or DL frame with more than one transmission gap caused by one or more compressed mode pattern sequences, the DL transmission shall be stopped and the RADIO LINK FAILURE INDICATION message shall be sent with the cause value "Invalid CM Settings". After sending the RADIO LINK FAILURE INDICATION message to notify the permanent failure, the Node B shall not remove the Radio Link(s)/Radio Link Set(s) from the Node B Communication Context or the Node B Communication Context itself.]

In the other cases, the Radio Link Failure procedure is used to indicate that one or more Radio Link(s)/Radio Link Set(s) are permanently unavailable and cannot be restored. After sending the RADIO LINK FAILURE INDICATION message to notify the permanent failure, the Node B shall not remove the Radio Link/Radio Link Set from the Node B Communication Context or the Node B Communication Context itself. When applicable, the retention priorities associated with the transport channels shall be used by the Node B to prioritise which Radio Link(s)/Radio Link Set(s) to indicate as unavailable to the CRNC.

Typical cause values are:

**Radio Network Layer Causes:**

- Synchronisation Failure
- Invalid CM settings

**Transport Layer Causes:**

- Transport Resources Unavailable

**Miscellaneous Causes:**

- Control Processing Overload
- HW Failure
- O&M Intervention

### 8.3.12.3 Abnormal Conditions

-

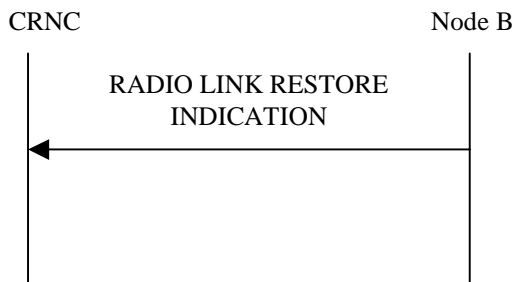
## 8.3.13 Radio Link Restoration

### 8.3.13.1 General

This procedure is used by the Node B to notify the achievement and re-achievement of uplink synchronisation of one or more [FDD - Radio Link Sets][TDD – Radio Links or CCTrCHs within a Radio Link] on the Uu interface.

The Node B may initiate the Radio Link Restoration procedure at any time after establishing a Radio Link.

### 8.3.13.2 Successful Operation



**Figure 44: Radio Link Restoration procedure, Successful Operation**

The Node B shall send the RADIO LINK RESTORE INDICATION message to the CRNC when indicated by the UL synchronisation detection algorithm defined in ref. [10] and [21]. [FDD – The algorithm in ref. [10] shall use the minimum value of the parameters N\_INSYNC\_IND that are configured in the cells supporting the radio links of the RL Set.] The message shall use the Communication Control Port assigned to the concerned Node B Communication Context.

[TDD – If the re-established Uu synchronisation concerns one or more individual Radio Links, the Node B shall indicate the affected Radio Link(s) using the *RL Information IE*.] [TDD – If the re-established Uu synchronisation concerns one or more individual CCTrCHs within a radio link, the Node B shall indicate the affected CCTrCHs using the *CCTrCH ID IE*.] [FDD – If the re-established Uu synchronisation concerns one or more Radio Link Set(s), the Node B shall indicate the affected Radio Link Set(s) using the *RL Set Information IE*.]

### 8.3.13.3 Abnormal Condition

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## 8.3.14 Compressed Mode Command [FDD]

### 8.3.14.1 General

The Compressed Mode Command procedure is used to activate or deactivate the compressed mode in the Node B for one Node B Communication Context.

The Compressed Mode Command procedure shall not be initiated if a Prepared Reconfiguration exists, as defined in subclause 3.1.

### 8.3.14.2 Successful Operation



**Figure 47: Compressed Mode Command procedure, Successful Operation**

The procedure is initiated by the CRNC sending a COMPRESSED MODE COMMAND message to the Node B using the Communication Control Port assigned to the concerned Node B Communication Context.

The Node B shall deactivate all the ongoing Transmission Gap Pattern Sequences at the *CM Configuration Change CFN IE* requested by the CRNC when receiving the COMPRESSED MODE COMMAND message from the CRNC. From that moment on, all Transmission Gap Pattern Sequences included in *Transmission Gap Pattern Sequence Status IE* repetitions (if present) shall be started when the indicated *TGCFN IE* elapses. The *CM Configuration Change CFN IE* in the *Active Pattern Sequence Information IE* and *TGCFN IE* for each sequence refer to the next coming CFN with that value.

If the values of the *CM Configuration Change CFN* IE and the *TGCFN* IE are equal, the concerned Transmission Gap Pattern Sequence shall be started immediately at the CFN with a value equal to the value received in the *CM Configuration Change CFN* IE.

### 8.3.14.3 Abnormal Conditions

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## 8.3.15 Downlink Power Timeslot Control [TDD]

### 8.3.15.1 General

The purpose of this procedure is to enable the Node B to use the indicated DL Timeslot ISCP values when deciding the DL TX Power for each timeslot.

The Downlink Power Timeslot Control procedure can be initiated by the CRNC at any time when the Node B Communication Context exists, irrespective of other ongoing CRNC initiated dedicated NBAP procedures towards this Node B Communication Context. The only exception occurs when the CRNC has requested the deletion of the last RL via this Node B, in which case the Downlink Power Timeslot Control procedure shall no longer be initiated.

### 8.3.15.2 Successful Operation



**Figure 47A: Downlink Power Timeslot Control procedure, Successful Operation**

The procedure is initiated by the CRNC sending a DL POWER TIMESLOT CONTROL REQUEST message to the Node B using the Communication Control Port assigned to the concerned Node B Communication Context.

Upon reception, the Node B shall use the indicated DL Timeslot ISCP value when deciding the DL TX Power for each timeslot as specified in ref. [21], i.e. it shall reduce the DL TX power in those downlink timeslots of the radio link where the interference is low, and increase the DL TX power in those timeslots where the interference is high, while keeping the total downlink power in the radio link unchanged.

If the *Primary CCPCH RSCP Delta* IE is included, the NodeB shall assume that the reported value for Primary CCPCH RSCP is in the negative range as per [23], and the value is equal to the *Primary CCPCH RSCP Delta* IE. If the *Primary CCPCH RSCP Delta* IE is not included and the *Primary CCPCH RSCP* IE is included, the Node B shall assume that the reported value is in the non-negative range as per [23], and the value is equal to the *Primary CCPCH RSCP* IE. The Node B should use the indicated value for HS-DSCH scheduling and transmit power adjustment.

### 8.3.15.3 Abnormal Conditions

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## 8.3.16 Radio Link Pre-emption

### 8.3.16.1 General

This procedure is started by the Node B when resources need to be freed.

The Node B may initiate the Radio Link Pre-emption procedure at any time after establishing a Radio Link.

8.3.16.2 Successful Operation

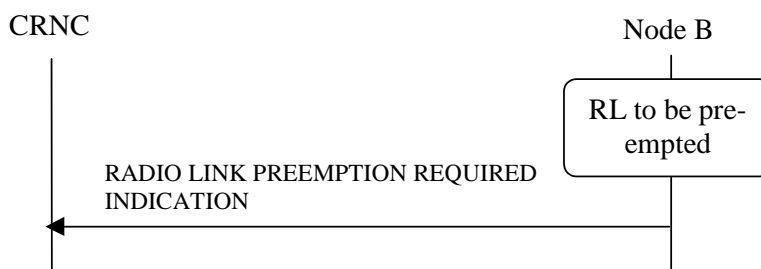


Figure 47B: Radio Link Pre-emption procedure, Successful Operation

When the Node B detects that a one or more Radio Links should be pre-empted (see Annex A), it shall send the RADIO LINK PREEMPTION REQUIRED INDICATION message to the CRNC using the Communication Control Port assigned to the concerned Node B Communication Context.

If all Radio Links for a CRNC Communication Context ID should be pre-empted, the *RL Information* IE shall be omitted. If one or several but not all Radio Links should be pre-empted for a CRNC Communication Context, the Radio Links that should be pre-empted shall be indicated in the *RL Information* IE. The Radio Link(s) that should be pre-empted should be deleted by the CRNC.

8.3.16.3 Abnormal Conditions

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8.3.17 Bearer Re-arrangement

8.3.17.1 General

This procedure is started by the Node B when Bearers for the Node B Communication Context need to be rearranged. The Node B may initiate the Bearer Rearrangement procedure at any time after establishing a Radio Link.

8.3.17.2 Successful Operation



Figure 47C: Bearer Re-arrangement Indication, Successful Operation

When the Node B detects that a signaling bearer or a transport bearer or both need to be re-arranged for the Node B Communication Context, it shall send the BEARER REARRANGEMENT INDICATION message to the CRNC. The message shall use the Communication Control Port assigned for this Node B Communication Context.

If the signaling bearer for the control of the Node B Communication Context needs to be rearranged, the *Signalling Bearer Requested Indicator* IE shall be included in the BEARER REARRANGEMENT INDICATION message.

If the transport bearer for a transport channel needs to be rearranged, the ID of the transport channel for which a new transport bearer is required, shall be included in the BEARER REARRANGEMENT INDICATION message.

[FDD - If the TFCI2 bearer on which the DSCH TFCI Signaling control frames shall be received is required to be rearranged, the *TFCI2 Bearer Request Indicator* IE shall be included in the BEARER REARRANGEMENT INDICATION message.]

### 8.3.17.3 Abnormal Conditions

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## 8.3.18 Radio Link Activation

### 8.3.18.1 General

This procedure is used to activate or de-activate the DL transmission on the Uu interface regarding selected RLs.

### 8.3.18.2 Successful Operation



**Figure 47D: Radio Link Activation procedure**

This procedure is initiated by sending the RADIO LINK ACTIVATION COMMAND message from the CRNC to the Node B. The message shall use the Communication Control Port assigned for this Node B Communication Context. Upon reception, the Node B shall for each concerned RL:

- if the *Delayed Activation Update* IE indicates "Activate":
  - if the *Activation Type* IE equals "Unsynchronised":
    - [FDD - start transmission on the new RL after synchronisation is achieved in the DL user plane as specified in [16].]
    - [TDD - start transmission on the new RL immediately as specified in [16].]
  - if the *Activation Type* IE equals "Synchronised":
    - [FDD - start transmission on the new RL after synchronisation is achieved in the DL user plane as specified in [16], however never before the CFN indicated in the *Activation CFN* IE.]
    - [TDD - start transmission on the new RL at the CFN indicated in the *Activation CFN* IE as specified in [16].]
- [FDD - the Node B shall apply the power level indicated in the *Initial DL Tx Power* IE to the transmission on each DL DPCH of the RL when starting transmission until either UL synchronisation on the Uu interface is achieved for the RLS or power balancing is activated. During this period no inner loop power control shall be performed and, unless activated by the DL POWER CONTROL REQUEST message, no power balancing shall be performed. The DL power shall then vary according to the inner loop power control (see ref.[10], subclause 5.2.1.2) and downlink power balancing adjustments (see subclause 8.3.7).]
- [TDD - the Node B shall apply the power level indicated in the *Initial DL Tx Power* IE to the transmission on each DL DPCH and on each Time Slot of the RL when starting transmission until the UL synchronisation on the Uu interface is achieved for the RL. No inner loop power control shall be performed during this period. The DL power shall then vary according to the inner loop power control (see ref.[22], subclause 4.2.3.3).]

- [FDD - if the *Propagation Delay* IE is included, the Node B may use this information to speed up the detection of UL synchronisation on the Uu interface.]
- [FDD - if the *First RLS Indicator* IE is included, it indicates if the concerned RL shall be considered part of the first RLS established towards this UE. The *First RLS Indicator* IE shall be used by the Node B together with the value of the *DL TPC Pattern 01 Count* IE which the Node B has received in the Cell Setup procedure, to determine the initial TPC pattern in the DL of the concerned RL and all RLs which are part of the same RLS, as described in [10], section 5.1.2.2.1.2.]
- if the *Delayed Activation Update* IE indicates "Deactivate":
  - stop DL transmission immediately, if the *Deactivation Type* IE equals "Unsynchronised", or at the CFN indicated by the *Deactivation CFN* IE, if the *Deactivation Type* IE equals "Synchronised".

### 8.3.18.3 Abnormal Conditions

[FDD- If the *Delayed Activation Update* IE is included in the RADIO LINK ACTIVATION COMMAND message, it indicates "Activate" and the *First RLS Indicator* IE is not included, the Node B shall initiate the Error Indication procedure.]

## 8.3.19 Radio Link Parameter Update

### 8.3.19.1 General

The Radio Link Parameter Update procedure is executed by the Node B when the update of HS-DSCH related radio link parameter values are needed on the Node B side. With this procedure, Node B can suggest some HS-DSCH related Radio Link Parameter values to RNC.

The Radio Link Parameter Update procedure shall not be initiated if a Prepared Reconfiguration exists, as defined in subclause 3.1.

### 8.3.19.2 Successful Operation



**Figure 48: Radio Link Parameter Update Indication, Successful Operation**

The Node B initiates the Radio Link Parameter Update procedure by sending the RADIO LINK PARAMETER UPDATE INDICATION message to the CRNC. The message contains suggested value(s) of the HS-DSCH related parameter(s) that should be reconfigured on the radio link.

If the Node B needs to update HS-DSCH related parameters, the Node B shall initiate RADIO LINK PARAMETER UPDATE INDICATION message including [FDD - *HS-DSCH FDD Update Information* IE] [TDD - *HS-DSCH TDD Update Information* IE].

If the Node B needs to allocate new HS-SCCH Codes, the Node B shall initiate RADIO LINK PARAMETER UPDATE INDICATION message including *HS-SCCH Code Change Indicator* IE.

[FDD - If the Node B needs to update the CQI Feedback Cycle *k*, CQI Repetition Factor, ACK-NACK Repetition Factor, CQI Power Offset, ACK Power Offset and/or NACK Power Offset, the Node B shall initiate RADIO LINK PARAMETER UPDATE INDICATION message including *CQI Feedback Cycle k* IE, *CQI Repetition Factor* IE, *ACK-NACK Repetition Factor* IE, *CQI Power Offset* IE, *ACK Power Offset* IE and/or *NACK Power Offset* IE.]

[TDD - If the Node B needs to update the TDD ACK-NACK Power Offset the Node B shall initiate RADIO LINK PARAMETER UPDATE INDICATION message including *TDD ACK-NACK Power Offset* IE.]

### 8.3.19.3 Abnormal Conditions

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## 8.4 Error Handling Procedures

### 8.4.1 Error Indication

#### 8.4.1.1 General

The Error Indication procedure is initiated by a node in order to report detected errors in one incoming message, provided they cannot be reported by an appropriate response message.

#### 8.4.1.2 Successful Operation

When the conditions defined in subclause 10 are fulfilled, the Error Indication procedure is initiated by an ERROR INDICATION message sent from the receiving node.

In case the Error Indication procedure was triggered by a dedicated procedure, the following applies:

- When the ERROR INDICATION message is sent from a Node B to its CRNC, the *CRNC Communication Context ID* IE shall be included in the message if the corresponding Node B Communication Context, addressed by the *Node B Communication Context ID* IE which was received in the message triggering the Error Indication procedure, exists;
- When the ERROR INDICATION message is sent from a CRNC to a Node B, the *Node B Communication Context ID* IE shall be included in the message if the corresponding CRNC Communication Context, addressed by the *CRNC Communication Context ID* IE which was received in the message triggering the Error Indication procedure, exists;
- When the message triggering the Error Indication procedure is received in the Node B and there is no Node B Communication Context as indicated by the *Node B Communication Context ID* IE, the Node B shall include the unknown *Node B Communication Context ID* IE from the received message in the ERROR INDICATION message, unless another handling is specified in the procedure text for the affected procedure.
- When the message triggering the Error Indication procedure is received in the CRNC and there is no CRNC Communication Context as indicated by the *CRNC Communication Context ID* IE, the CRNC shall include the unknown *CRNC Communication Context ID* IE from the received message in the ERROR INDICATION message, unless another handling is specified in the procedure text for the affected procedure.

The ERROR INDICATION message shall include either the *Cause* IE, or the *Criticality Diagnostics* IE or both the *Cause* IE and the *Criticality Diagnostics* IE.

Typical cause values for the ERROR INDICATION message are:

#### Protocol Causes:

- Transfer Syntax Error
- Abstract Syntax Error (Reject)
- Abstract Syntax Error (Ignore and Notify)
- Message not Compatible with Receiver State
- Unspecified

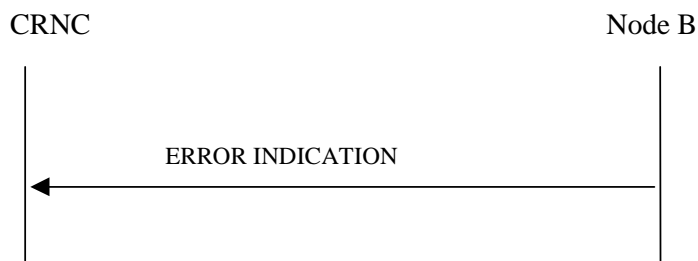


Figure 49: Error Indication procedure (Node B to CRNC): Successful Operation

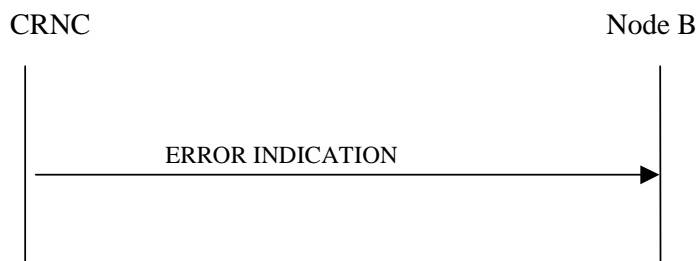


Figure 50: Error Indication procedure (CRNC to Node B), Successful Operation

8.4.1.3 Abnormal Conditions

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## 9 Elements for NBAP communication

### 9.1 Message Functional Definition and Contents

#### 9.1.1 General

Subclause 9.1 presents the contents of NBAP messages in tabular format. The corresponding ASN.1 definition is presented in subclause 9.3. In case there is contradiction between the tabular format in subclause 9.1 and the ASN.1 definition, the ASN.1 shall take precedence, except for the definition of conditions for the presence of conditional IEs, where the tabular format shall take precedence.

NOTE: The messages have been defined in accordance to the guidelines specified in ref. [26].

#### 9.1.2 Message Contents

##### 9.1.2.1 Presence

An information element can be of the following types:

<b>M</b>	IEs marked as Mandatory (M) shall always be included in the message.
<b>O</b>	IEs marked as Optional (O) may or may not be included in the message.
<b>C</b>	IEs marked as Conditional (C) shall be included in a message only if the condition is satisfied. Otherwise the IE shall not be included.

In case of an Information Element group, the group is preceded by a name for the info group (in bold). It is also indicated how many times a group may be repeated in the message and whether the group is conditional. The presence



field of the Information Elements inside one group defines if the Information Element is mandatory, optional or conditional if the group is present.

### 9.1.2.2 Criticality

Each Information Element or Group of Information Elements may have a criticality information applied to it. Following cases are possible:

–	No criticality information is applied explicitly.
<b>YES</b>	Criticality information is applied. 'YES' is usable only for non-repeatable information elements.
<b>GLOBAL</b>	The information element and all its repetitions together have one common criticality information. 'GLOBAL' is usable only for repeatable information elements.
<b>EACH</b>	Each repetition of the information element has its own criticality information. It is not allowed to assign different criticality values to the repetitions. 'EACH' is usable only for repeatable information elements.

### 9.1.2.3 Range

The Range column indicates the allowed number of copies of repetitive IEs.

### 9.1.2.4 Assigned Criticality

This column provides the actual criticality information as defined in subclause 10.3.2, if applicable.

## 9.1.3 COMMON TRANSPORT CHANNEL SETUP REQUEST

## 9.1.3.1 FDD Message

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	reject
Transaction ID	M		9.2.1.62		–	
C-ID	M		9.2.1.9		YES	reject
Configuration Generation ID	M		9.2.1.16		YES	reject
CHOICE <i>Common Physical Channel To Be Configured</i>	M				YES	ignore
>Secondary CCPCH					–	
>>Secondary CCPCH		1			–	
>>>Common Physical Channel ID	M		9.2.1.13		–	
>>>FDD SCCPCH Offset	M		9.2.2.15	Corresponds to [7]: S-CCPCH,k	–	
>>>DL Scrambling Code	C-PCH		9.2.2.13		–	
>>>FDD DL Channelisation Code Number	M		9.2.2.14		–	
>>>TFCS	M		9.2.1.58	For the DL.	–	
>>>Secondary CCPCH Slot Format	M		9.2.2.43		–	
>>>TFCI Presence	C-SlotFormat		9.2.1.57	Refer to TS [7]	–	
>>>Multiplexing Position	M		9.2.2.23		–	
>>>Power Offset Information		1			–	
>>>>PO1	M		Power Offset 9.2.2.29	Power offset for the TFCI bits	–	
>>>>PO3	M		Power Offset 9.2.2.29	Power offset for the pilot bits	–	
>>>STTD Indicator	M		9.2.2.48		–	
>>>FACH Parameters		0..<maxno ofFACHs>			GLOBAL	reject
>>>>Common Transport Channel ID	M		9.2.1.14		–	
>>>>Transport Format Set	M		9.2.1.59	For the DL.	–	
>>>>ToAWS	M		9.2.1.61		–	
>>>>ToAWE	M		9.2.1.60		–	
>>>>Max FACH Power	M		DL Power 9.2.1.21	Maximum allowed power on the FACH.	–	
>>>>Binding ID	O		9.2.1.4	Shall be ignored if bearer establishment with ALCAP.	YES	ignore
>>>>Transport Layer Address	O		9.2.1.63	Shall be ignored if	YES	ignore

				bearer establishment with ALCAP.		
<b>&gt;&gt;&gt;PCH Parameters</b>		0..1			YES	reject
>>>>Common Transport Channel ID	M		9.2.1.14		-	
>>>>Transport Format Set	M		9.2.1.59	For the DL.	-	
>>>>ToAWS	M		9.2.1.61		-	
>>>>ToAWE	M		9.2.1.60		-	
>>>>PCH Power	M		DL Power 9.2.1.21		-	
<b>&gt;&gt;&gt;&gt;PICH Parameters</b>		1			-	
>>>>>Common Physical Channel ID	M		9.2.1.13		-	
>>>>>FDD DL Channelisation Code Number	M		9.2.2.14		-	
>>>>>PICH Power	M		9.2.1.49A		-	
>>>>>PICH Mode	M		9.2.2.26	Number of PI per frame	-	
>>>>>STTD Indicator	M		9.2.2.48		-	
>>>>Binding ID	O		9.2.1.4	Shall be ignored if bearer establishment with ALCAP.	YES	ignore
>>>>Transport Layer Address	O		9.2.1.63	Shall be ignored if bearer establishment with ALCAP.	YES	ignore
>PRACH					-	
<b>&gt;&gt;PRACH</b>		1			-	
>>>Common Physical Channel ID	M		9.2.1.13		-	
>>>Scrambling Code Number	M		9.2.2.42		-	
>>>TFCS	M		9.2.1.58	For the UL.	-	
>>>Preamble Signatures	M		9.2.2.31		-	
<b>&gt;&gt;&gt;Allowed Slot Format Information</b>		1..<maxno ofSlotFormatsPRACH >			-	
>>>>RACH Slot Format	M		9.2.2.37		-	
>>>>RACH Sub Channel Numbers	M		9.2.2.38		-	
>>>Puncture Limit	M		9.2.1.50	For the UL	-	
>>>Preamble Threshold	M		9.2.2.32		-	
<b>&gt;&gt;&gt;RACH Parameters</b>		1			YES	reject
>>>>Common Transport Channel ID	M		9.2.1.14		-	
>>>>Transport Format	M		9.2.1.59	For the UL.	-	

Set						
>>>>Binding ID	O		9.2.1.4	Shall be ignored if bearer establishment with ALCAP.	YES	ignore
>>>>Transport Layer Address	O		9.2.1.63	Shall be ignored if bearer establishment with ALCAP.	YES	ignore
<b>&gt;&gt;&gt;AICH Parameters</b>		1			–	
>>>>Common Physical Channel ID	M		9.2.1.13		–	
>>>>AICH Transmission Timing	M		9.2.2.1		–	
>>>>FDD DL Channelisation Code Number	M		9.2.2.14		–	
>>>>AICH Power	M		9.2.2.D		–	
>>>>STTD Indicator	M		9.2.2.48		–	
>PCPCHs					–	
<b>&gt;&gt;CPCH Parameters</b>		1			–	
>>>Common Transport Channel ID	M		9.2.1.14		–	
>>>Transport Format Set	M		9.2.1.59	For the UL.	–	
>>>AP Preamble Scrambling Code	M		CPCH Scrambling Code Number 9.2.2.4B		–	
>>>CD Preamble Scrambling Code	M		CPCH Scrambling Code Number 9.2.2.4B		–	
>>>TFCS	M		9.2.1.58	For the UL	–	
>>>CD Signatures	O		Preamble Signatures 9.2.2.31	Note: When not present, all CD signatures are to be used.	–	
>>>CD Sub Channel Numbers	O		9.2.2.1C		–	
>>>Puncture Limit	M		9.2.1.50	For the UL	–	
>>>CPCH UL DPCCH Slot Format	M		9.2.2.4C	For UL CPCH message control part	–	
>>>UL SIR	M		9.2.1.67A		–	
>>>Initial DL Transmission Power	M		DL Power 9.2.1.21		–	
>>>Maximum DL Power	M		DL Power 9.2.1.21		–	
>>>Minimum DL Power	M		DL Power 9.2.1.21		–	
>>>PO2	M		Power Offset 9.2.2.29	Power offset for the TPC bits relative to the	–	

				pilot bits.		
>>>FDD TPC DL Step Size	M		9.2.2.16		–	
>>>N_Start_Message	M		9.2.2.23C		–	
>>>N_EOT	M		9.2.2.23A		–	
>>>Channel Assignment Indication	M		9.2.2.1D		–	
>>>CPCH Allowed Total Rate	M		9.2.2.4A		–	
>>>PCPCH Channel Information		1..<maxno ofPCPCHs >			–	
>>>>Common Physical Channel ID	M		9.2.1.13		–	
>>>>CPCH Scrambling Code Number	M		9.2.2.4B	For UL PCPCH	–	
>>>>DL Scrambling Code	M		9.2.2.13	For DL CPCH message part	–	
>>>>FDD DL Channelisation Code Number	M		9.2.2.14	For DL CPCH message part	–	
>>>>PCP Length	M		9.2.2.24A		–	
>>>>UCSM Information	C-NCA	1			–	
>>>>>Min UL Channelisation Code Length	M		9.2.2.22		–	
>>>>>NF_max	M		9.2.2.23B		–	
>>>>>Channel Request Parameters		0..<maxA PSigNum>			–	
>>>>>AP Preamble Signature	M		9.2.2.1A		–	
>>>>>AP Sub Channel Number	O		9.2.2.1B		–	
>>>VCAM Mapping Information	C-CA	1..<maxno ofLen>		Refer to TS [18]	–	
>>>>Min UL Channelisation Code Length	M		9.2.2.22		–	
>>>>NF_max	M		9.2.2.23B		–	
>>>>Max Number of PCPCHs	M		9.2.2.20A		–	
>>>>SF Request Parameters		1..<maxA PSigNum>			–	
>>>>>AP Preamble Signature	M		9.2.2.1A		–	
>>>>>AP Sub Channel Number	O		9.2.2.1B		–	
>>>>AP-AICH Parameters		1			–	
>>>>>Common Physical Channel ID	M		9.2.1.13		–	
>>>>>FDD DL Channelisation Code	M		9.2.2.14		–	

Number						
>>>>AP-AICH Power	M		AICH Power 9.2.2.D		-	
>>>>CSICH Power	M		AICH Power 9.2.2.D	For CSICH bits at end of AP-AICH slot	-	
>>>>STTD Indicator	M		9.2.2.48		-	
>>>CD/CA-ICH Parameters		1			-	
>>>>Common Physical Channel ID	M		9.2.1.13		-	
>>>>FDD DL Channelisation Code Number	M		9.2.2.14		-	
>>>>CD/CA-ICH Power	M		AICH Power 9.2.2.D		-	
>>>>STTD Indicator	M		9.2.2.48		-	
>>>Binding ID	O		9.2.1.4	Shall be ignored if bearer establishment with ALCAP.	YES	ignore
>>>Transport Layer Address	O		9.2.1.63	Shall be ignored if bearer establishment with ALCAP.	YES	ignore

Condition	Explanation
SlotFormat	The IE shall be present if the <i>Secondary CCPCH Slot Format</i> IE is set to any of the values from 8 to 17.
CA	The IE shall be present if the <i>Channel Assignment Indication</i> IE is set to "CA Active".
NCA	The IE shall be present if the <i>Channel Assignment Indication</i> IE is set to "CA Inactive".
PCH	The IE shall be present if the <i>PCH Parameters</i> IE is not present.

Range Bound	Explanation
<i>maxnoofFACHs</i>	Maximum number of FACHs that can be defined on a Secondary CCPCH
<i>maxnoofPCPCHs</i>	Maximum number of PCPCHs for a CPCH
<i>maxnoofLen</i>	Maximum number of Min UL Channelisation Code Length
<i>maxnoofSlotFormatsPRACH</i>	Maximum number of SF for a PRACH
<i>maxAPSigNum</i>	Maximum number of AP Signatures

## 9.1.3.2 TDD Message

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	reject
Transaction ID	M		9.2.1.62		–	
C-ID	M		9.2.1.9		YES	reject
Configuration Generation ID	M		9.2.1.16		YES	reject
CHOICE <i>Common Physical Channel To Be Configured</i>	M				YES	ignore
>Secondary CCPCHs					–	
>>SCCPCH CCTrCH ID	M		CCTrCH ID 9.2.3.3	For DL CCTrCH supporting one or several Secondary CCPCHs	–	
>>TFCS	M		9.2.1.58	For DL CCTrCH supporting one or several Secondary CCPCHs	–	
>>TFCI Coding	M		9.2.3.22		–	
>>Puncture Limit	M		9.2.1.50		–	
>>CHOICE <i>HCR or LCR</i>	M			See note 1 below	–	
>>>3.84Mcps TDD					–	
>>>>Secondary CCPCH		1..<maxno ofSCCPC Hs>			GLOBAL	reject
>>>>>Common Physical Channel ID	M		9.2.1.13		–	
>>>>>TDD Channelisation Code	M		9.2.3.19		–	
>>>>>Time Slot	M		9.2.3.23		–	
>>>>>Midamble Shift And Burst Type	M		9.2.3.7		–	
>>>>>TDD Physical Channel Offset	M		9.2.3.20		–	
>>>>>Repetition Period	M		9.2.3.16		–	
>>>>>Repetition Length	M		9.2.3.15		–	
>>>>>SCCPCH Power	M		DL Power 9.2.1.21		–	
>>>1.28Mcps TDD					–	
>>>>Secondary CCPCH LCR		1..<maxno ofSCCPC HsLCR>			GLOBAL	reject
>>>>>Common Physical Channel ID	M		9.2.1.13		–	
>>>>>TDD Channelisation Code LCR	M		9.2.3.19a		–	
>>>>>Time Slot	M		9.2.3.24A		–	

LCR						
>>>>Midamble Shift LCR	M		9.2.3.7A		–	
>>>>TDD Physical Channel Offset	M		9.2.3.20		–	
>>>>Repetition Period	M		9.2.3.16		–	
>>>>Repetition Length	M		9.2.3.15		–	
>>>>SCCPCH Power	M		DL Power 9.2.1.21		–	
>>>> SCCPCH Time Slot Format LCR	M		TDD DL DPCH Time Slot Format LCR 9.2.3.19D		–	
<b>&gt;&gt;FACH Parameters</b>		<i>0..&lt;maxno ofFACHs&gt;</i>			GLOBAL	reject
>>>Common Transport Channel ID	M		9.2.1.14		–	
>>>FACH CCTrCH ID	M		CCTrCH ID 9.2.3.3		–	
>>>Transport Format Set	M		9.2.1.59	For the DL.	–	
>>>ToAWS	M		9.2.1.61		–	
>>>ToAWE	M		9.2.1.60		–	
>>>Max FACH Power	O		DL Power 9.2.1.21	Applicable to 1.28Mcps TDD only	YES	reject
>>>Binding ID	O		9.2.1.4	Shall be ignored if bearer establishment with ALCAP.	YES	ignore
>>>Transport Layer Address	O		9.2.1.63	Shall be ignored if bearer establishment with ALCAP.	YES	ignore
<b>&gt;&gt;PCH Parameters</b>		<i>0..1</i>			YES	reject
>>>Common Transport Channel ID	M		9.2.1.14		–	
>>>PCH CCTrCH ID	M		CCTrCH ID 9.2.3.3		–	
>>>Transport Format Set	M		9.2.1.59	For the DL.	–	
>>>ToAWS	M		9.2.1.61		–	
>>>ToAWE	M		9.2.1.60		–	
>>>CHOICE <i>HCR or LCR</i>	M			See note 1 below	–	
>>>>3.84Mcps TDD					–	
<b>&gt;&gt;&gt;&gt;PICH Parameters</b>		<i>0..1</i>			YES	reject
>>>>>Common Physical Channel ID	M		9.2.1.13		–	
>>>>>TDD Channelisation	M		9.2.3.19		–	



Code						
>>>>>Time Slot	M		9.2.3.23		-	
>>>>>Midamble Shift And Burst Type	M		9.2.3.7		-	
>>>>>TDD Physical Channel Offset	M		9.2.3.20		-	
>>>>>Repetition Period	M		9.2.3.16		-	
>>>>>Repetition Length	M		9.2.3.15		-	
>>>>>Paging Indicator Length	M		9.2.3.8		-	
>>>>>PICH Power	M		9.2.1.49A		-	
>>>>1.28Mcps TDD					-	
>>>>>PICH Parameters LCR		1			YES	reject
>>>>>Common Physical Channel ID	M		9.2.1.13		-	
>>>>>TDD Channelisation Code LCR	M		9.2.3.19a		-	
>>>>>Time Slot LCR	M		9.2.3.24A		-	
>>>>>Midamble Shift LCR	M		9.2.3.7A		-	
>>>>>TDD Physical Channel Offset	M		9.2.3.20		-	
>>>>>Repetition Period	M		9.2.3.16		-	
>>>>>Repetition Length	M		9.2.3.15		-	
>>>>>Paging Indicator Length	M		9.2.3.8		-	
>>>>>PICH Power	M		9.2.1.49A		-	
>>>>>Second TDD Channelisation Code LCR	M		TDD Channelisation Code LCR 9.2.3.19a		-	
>>>>>TSTD Indicator	O		9.2.1.64		YES	reject
>>>PCH Power	O		DL Power 9.2.1.21	Applicable to 1.28Mcps TDD only	YES	reject
>>>Binding ID	O		9.2.1.4	Shall be ignored if bearer establishment with ALCAP.	YES	ignore
>>>Transport Layer Address	O		9.2.1.63	Shall be ignored if bearer establishment	YES	ignore

				with ALCAP.		
--	--	--	--	-------------	--	--

>>TSTD Indicator	O		9.2.1.64		YES	reject
>PRACH					-	
>>CHOICE HCR or LCR	M			See note 1 below	-	
>>>3.84Mcps TDD					-	
>>>>PRACH		1			YES	reject
>>>>>Common Physical Channel ID	M		9.2.1.13		-	
>>>>>TFCS	M		9.2.1.58		-	
>>>>>Time Slot	M		9.2.3.23		-	
>>>>>TDD Channelisation Code	M		9.2.3.19		-	
>>>>>Max PRACH Midamble Shifts	M		9.2.3.6		-	
>>>>>PRACH Midamble	M		9.2.3.14		-	
>>>>>RACH		1			YES	reject
>>>>>>Common Transport Channel ID	M		9.2.1.14		-	
>>>>>>Transport Format Set	M		9.2.1.59	For the UL	-	
>>>>>>Binding ID	O		9.2.1.4	Shall be ignored if bearer establishment with ALCAP.	YES	ignore
>>>>>>Transport Layer Address	O		9.2.1.63	Shall be ignored if bearer establishment with ALCAP.	YES	ignore
>>>>1.28Mcps TDD					-	
>>>>>PRACH LCR		1..<maxno ofPRACHL CRs>			GLOBAL	reject
>>>>>>Common Physical Channel ID	M		9.2.1.13		-	
>>>>>>TFCS	M		9.2.1.58		-	
>>>>>>Time Slot LCR	M		9.2.3.24A		-	
>>>>>>TDD Channelisation Code LCR	M		9.2.3.19a		-	
>>>>>>Midamble Shift LCR	M		9.2.3.7A		-	
>>>>>>RACH		1			YES	reject
>>>>>>>Common Transport Channel ID	M		9.2.1.14		-	
>>>>>>>Transport Format Set	M		9.2.1.59	For the UL	-	
>>>>>>>Binding ID	O		9.2.1.4	Shall be ignored if bearer establishment with ALCAP.	YES	ignore
>>>>>>>Transport	O		9.2.1.63	Shall be	YES	ignore

Layer Address				ignored if bearer establishment with ALCAP.		
>>FPACH		0..1		Mandatory for 1.28Mcps TDD. Not Applicable to 3.84Mcps TDD.	YES	reject
>>>Common Physical Channel ID	M		9.2.1.13		–	
>>>TDD Channelisation Code LCR	M		9.2.3.19a		–	
>>>Time Slot LCR	M		9.2.3.24A		–	
>>>Midamble Shift LCR	M		9.2.3.7A		–	
>>>Max FPACH Power	M		9.2.3.5E		–	

Note 1: This information element is a simplified representation of the ASN.1. The choice is in reality performed through the use of ProtocolIE-Single-Container within the ASN.1.

Range Bound	Explanation
<i>maxnoofSCCPCHs</i>	Maximum number of Secondary CCPCHs per CCTrCH for 3.84Mcps TDD
<i>maxnoofSCCPCHsLCR</i>	Maximum number of Secondary CCPCHs per CCTrCH for 1.28Mcps TDD
<i>maxnoofFACHs</i>	Maximum number of FACHs that can be defined on a Secondary CCPCH
<i>maxnoofPRACHLCRs</i>	Maximum number of PRACHs LCR that can be defined on a RACH for 1.28Mcps TDD

## 9.1.4 COMMON TRANSPORT CHANNEL SETUP RESPONSE

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	reject
Transaction ID	M		9.2.1.62		–	
<b>FACH Parameters Info</b>		<i>0..&lt;maxno ofFACHs&gt;</i>		The FACH Parameters may be combined with PCH Parameters	GLOBAL	ignore
>FACH Parameters	M		Common Transport Channel Information Response 9.2.1.14A		–	
PCH Parameters	O		Common Transport Channel Information Response 9.2.1.14A	The PCH Parameters may be combined with FACH Parameters	YES	ignore
RACH Parameters	O		Common Transport Channel Information Response 9.2.1.14A	The RACH Parameters shall not be combined with FACH Parameters or PCH Parameters	YES	ignore
CPCH Parameters	O		Common Transport Channel Information Response 9.2.1.14A	The CPCH Parameters shall not be combined with FACH Parameters or PCH Parameters or RACH Parameters	YES	ignore
Criticality Diagnostics	O		9.2.1.17		YES	ignore

Range Bound	Explanation
<i>maxnoofFACHs</i>	Maximum number of FACHs that can be defined on a Secondary CCPCH[FDD] / a group of Secondary CCPCHs [TDD]

## 9.1.5 COMMON TRANSPORT CHANNEL SETUP FAILURE

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	–
Message Type	M		9.2.1.46		YES	reject
Transaction ID	M		9.2.1.62		–	–
Cause	M		9.2.1.6		YES	ignore
Criticality Diagnostics	O		9.2.1.17		YES	ignore

## 9.1.6 COMMON TRANSPORT CHANNEL RECONFIGURATION REQUEST

### 9.1.6.1 FDD Message

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	reject
Transaction ID	M		9.2.1.62		–	
C-ID	M		9.2.1.9		YES	reject
Configuration Generation ID	M		9.2.1.16		YES	reject
CHOICE <i>Common Physical Channel To Be Configured</i>	M				YES	reject
> <i>Secondary CCPCH</i>					–	
>> <b>FACH Parameters</b>		<i>0..&lt;maxFA CHCell&gt;</i>			GLOBAL	reject
>>>Common Transport Channel ID	M		9.2.1.14		–	
>>>Max FACH Power	O		DL Power 9.2.1.21	Maximum allowed power on the FACH.	–	
>>>ToAWS	O		9.2.1.61		–	
>>>ToAWE	O		9.2.1.60		–	
>> <b>PCH Parameters</b>		<i>0..1</i>			YES	reject
>>>Common Transport Channel ID	M		9.2.1.14		–	
>>>PCH Power	O		DL Power 9.2.1.21	Power to be used on the PCH.	–	
>>>ToAWS	O		9.2.1.61		–	
>>>ToAWE	O		9.2.1.60		–	
>> <b>PICH Parameters</b>		<i>0..1</i>			YES	reject
>>>Common Physical Channel ID	M		9.2.1.13		–	
>>>PICH Power	O		9.2.1.49A		–	
> <i>PRACH</i>					–	
>> <b>PRACH Parameters</b>		<i>0..&lt;maxP RACHCell &gt;</i>			GLOBAL	reject
>>>Common Physical Channel ID	M		9.2.1.13		–	
>>>Preamble Signatures	O		9.2.2.31		–	
>>> <b>Allowed Slot Format Information</b>		<i>0..&lt;maxno ofSlotFormatsPRACH &gt;</i>			–	
>>>>RACH Slot Format	M		9.2.2.37		–	
>>>>RACH Sub Channel Numbers	O		9.2.2.38		–	
>> <b>AICH Parameters</b>		<i>0..&lt;maxP RACHCell &gt;</i>			GLOBAL	reject
>>>Common Physical	M		9.2.1.13		–	

Channel ID						
>>>AICH Power	O		9.2.2.D		–	
>CPCH					–	
>>CPCH Parameters		0..<maxno ofCPCHs>			GLOBAL	reject
>>>Common Transport Channel ID	M		9.2.1.14		–	
>>>UL SIR	O		9.2.1.67A		–	
>>>Initial DL Transmission Power	O		DL Power 9.2.1.21		–	
>>>Maximum DL Power	O		DL Power 9.2.1.21		–	
>>>Minimum DL Power	O		DL Power 9.2.1.21		–	
>>AP-AICH Parameters		0..<maxno ofCPCHs>			GLOBAL	reject
>>>Common Physical Channel ID	M		9.2.1.13		–	
>>>AP-AICH Power	O		AICH Power 9.2.2.D		–	
>>>CSICH Power	O		AICH Power 9.2.2.D	For CSICH bits at end of AP-AICH slot	–	
>>CD/CA-ICH Parameters		0..<maxno ofCPCHs>			GLOBAL	reject
>>>Common Physical Channel ID	M		9.2.1.13		–	
>>>CD/CA-ICH Power	O		AICH Power 9.2.2.D		–	

Range Bound	Explanation
<i>maxFACHCell</i>	Maximum number of FACHs that can be defined in a Cell
<i>maxnoofCPCHs</i>	Maximum number of CPCHs that can be defined in a Cell
<i>maxPRACHCell</i>	Maximum number of PRACHs and AICHs that can be defined in a Cell
<i>maxnoofSlotFormatsPRACH</i>	Maximum number of SF for a PRACH

### 9.1.6.2 TDD Message

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	reject
Transaction ID	M		9.2.1.62		–	
C-ID	M		9.2.1.9		YES	reject
Configuration Generation ID	M		9.2.1.16		YES	reject
<b>Secondary CCPCH Parameters</b>		0..1			YES	reject

>CCTrCH ID	M		9.2.3.3	For DL CCTrCH supporting one or several Secondary CCPCHs	–	
>Secondary CCPCHs To Be Configured		<i>0..&lt;maxno ofSCCPCHs&gt;</i>			GLOBAL	reject
>>Common Physical Channel ID	M		9.2.1.13		–	
>>SCCPCH Power	O		DL power 9.2.1.21		–	
<b>PICH Parameters</b>		<i>0..1</i>			YES	reject
>Common Physical Channel ID	M		9.2.1.13		–	
>PICH Power	O		9.2.1.49A		–	
<b>FACH Parameters</b>		<i>0..&lt;maxno ofFACHs&gt;</i>			GLOBAL	reject
>Common Transport Channel ID	M		9.2.1.14		–	
>ToAWS	O		9.2.1.61		–	
>ToAWE	O		9.2.1.60		–	
>Max FACH Power	O		DL Power 9.2.1.21	Applicable to 1.28Mcps TDD only	YES	reject
<b>PCH Parameters</b>		<i>0..1</i>			YES	reject
>Common Transport Channel ID	M		9.2.1.14		–	
>ToAWS	O		9.2.1.61		–	
>ToAWE	O		9.2.1.60		–	
>PCH Power	O		DL Power 9.2.1.21	Applicable to 1.28Mcps TDD only	YES	reject
<b>FPACH Parameters</b>		<i>0..1</i>		Mandatory for 1.28Mcps TDD. Not Applicable to 3.84Mcps TDD.	YES	reject
>Common Physical Channel ID	M		9.2.1.13		–	
>Max FPACH Power	O		9.2.3.5E		–	

Range Bound	Explanation
<i>maxnoofSCCPCHs</i>	Maximum number of SCCPCHs that can be repeated in a Cell
<i>maxnoofFACHs</i>	Maximum number of FACHs that can be repeated in a Cell

### 9.1.7 COMMON TRANSPORT CHANNEL RECONFIGURATION RESPONSE

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	reject
Transaction ID	M		9.2.1.62		–	
Criticality Diagnostics	O		9.2.1.17		YES	ignore



### 9.1.8 COMMON TRANSPORT CHANNEL RECONFIGURATION FAILURE

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	reject
Transaction ID	M		9.2.1.62		–	
Cause	M		9.2.1.6		YES	ignore
Criticality Diagnostics	O		9.2.1.17		YES	ignore

### 9.1.9 COMMON TRANSPORT CHANNEL DELETION REQUEST

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	reject
Transaction ID	M		9.2.1.62		–	
C-ID	M		9.2.1.9		YES	reject
Common Physical Channel ID	M		9.2.1.13	Indicates the Common Physical Channel for which the Common Transport Channels (together with the Common Physical Channel) shall be deleted.	YES	reject
Configuration Generation ID	M		9.2.1.16		YES	reject

### 9.1.10 COMMON TRANSPORT CHANNEL DELETION RESPONSE

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	reject
Transaction ID	M		9.2.1.62		–	
Criticality Diagnostics	O		9.2.1.17		YES	ignore

## 9.1.11 BLOCK RESOURCE REQUEST

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	reject
Transaction ID	M		9.2.1.62		–	
C-ID	M		9.2.1.9		YES	reject
Blocking Priority Indicator	M		9.2.1.5		YES	reject
Shutdown Timer	C-BlockNormal		9.2.1.56		YES	reject

Condition	Explanation
BlockNormal	The IE shall be present if the <i>Blocking Priority Indicator</i> IE indicates "Normal Priority".

## 9.1.12 BLOCK RESOURCE RESPONSE

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	reject
Transaction ID	M		9.2.1.62		–	
Criticality Diagnostics	O		9.2.1.17		YES	ignore

## 9.1.13 BLOCK RESOURCE FAILURE

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	reject
Transaction ID	M		9.2.1.62		–	
Cause	M		9.2.1.6		YES	ignore
Criticality Diagnostics	O		9.2.1.17		YES	ignore

## 9.1.14 UNBLOCK RESOURCE INDICATION

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	ignore
Transaction ID	M		9.2.1.62		–	
C-ID	M		9.2.1.9		YES	ignore

## 9.1.15 AUDIT REQUIRED INDICATION

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	ignore
Transaction ID	M		9.2.1.62		–	

## 9.1.16 AUDIT REQUEST

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	reject
Transaction ID	M		9.2.1.62		–	
Start Of Audit Sequence Indicator	M		9.2.1.56B		YES	reject

## 9.1.17 AUDIT RESPONSE

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	reject
Transaction ID	M		9.2.1.62		–	
End Of Audit Sequence Indicator	M		9.2.1.29A		YES	ignore
<b>Cell Information</b>		<i>0..&lt;maxCellsInNodeB&gt;</i>			EACH	ignore
>C-ID	M		9.2.1.9		–	
>Configuration Generation ID	M		9.2.1.16		–	
>Resource Operational State	M		9.2.1.52		–	
>Availability Status	M		9.2.1.2		–	
>Local Cell ID	M		9.2.1.38	The local cell that the cell is configured on	–	
>Primary SCH Information	O		Common Physical Channel Status Information 9.2.1.13A	Applicable to FDD only	YES	ignore
>Secondary SCH Information	O		Common Physical Channel Status Information 9.2.1.13A	Applicable to FDD only	YES	ignore
>Primary CPICH Information	O		Common Physical Channel Status Information 9.2.1.13A	Applicable to FDD only	YES	ignore
<b>&gt;Secondary CPICH Information</b>		<i>0..&lt;maxSecondaryCPICHCells&gt;</i>		Applicable to FDD only	EACH	ignore
>>Secondary CPICH Individual Information	M		Common Physical Channel Status Information 9.2.1.13A		–	
>Primary CCPCH Information	O		Common Physical Channel Status Information 9.2.1.13A		YES	ignore
>BCH Information	O		Common Transport Channel Status Information 9.2.1.14B		YES	ignore

<b>&gt;Secondary CCPCH Information</b>		$0..<maxS$ $CCPCHCell>$			EACH	ignore
>>Secondary CCPCH Individual Information	M		Common Physical Channel Status Information 9.2.1.13A		–	
>PCH Information	O		Common Transport Channel Status Information 9.2.1.14B		YES	ignore
>PICH Information	O		Common Physical Channel Status Information 9.2.1.13A		YES	ignore
<b>&gt;FACH Information</b>		$0..<maxFA$ $CHCell>$			EACH	ignore
>>FACH Individual Information	M		Common Transport Channel Status Information 9.2.1.14B		–	
<b>&gt;PRACH Information</b>		$0..<maxP$ $RACHCell$ >			EACH	ignore
>>PRACH Individual Information	M		Common Physical Channel Status Information 9.2.1.13A		–	
<b>&gt;RACH Information</b>		$0..<maxR$ $ACHCell>$			EACH	ignore
>>RACH Individual Information	M		Common Transport Channel Status Information 9.2.1.14B		–	
<b>&gt;AICH Information</b>		$0..<maxP$ $RACHCell$ >		Applicable to FDD only	EACH	ignore
>>AICH Individual Information	M		Common Physical Channel Status Information 9.2.1.13A		–	
<b>&gt;PCPCH Information</b>		$0..<maxP$ $CPCHCell$ >		Applicable to FDD only	EACH	ignore
>>PCPCH Individual Information	M		Common Physical		–	

			Channel Status Information 9.2.1.13A			
<b>&gt;CPCH Information</b>		<i>0..&lt;maxC PCHCell&gt;</i>		Applicable to FDD only	EACH	ignore
>>CPCH Individual Information	M		Common Transport Channel Status Information 9.2.1.14B		–	
<b>&gt;AP-AICH Information</b>		<i>0..&lt;maxC PCHCell&gt;</i>		Applicable to FDD only	EACH	ignore
>>AP-AICH Individual Information	M		Common Physical Channel Status Information 9.2.1.13A		–	
<b>&gt;CD/CA-ICH Information</b>		<i>0..&lt;maxC PCHCell&gt;</i>		Applicable to FDD only	EACH	ignore
>>CD/CA-ICH Individual Information	M		Common Physical Channel Status Information 9.2.1.13A		–	
>SCH Information	O		Common Physical Channel Status Information 9.2.1.13A	TDD Sync Channel Applicable to 3.84Mcps TDD only	YES	ignore
<b>&gt;FPACH Information</b>		<i>0..&lt;maxFP ACHCell&gt;</i>		Applicable to 1.28Mcps TDD only	EACH	ignore
>>FPACH Individual Information	M		Common Physical Channel Status Information 9.2.1.13A		–	
>DwPCH Information	O		Common Physical Channel Status Information 9.2.1.13A	Applicable to 1.28Mcps TDD only	YES	ignore
<b>&gt;HS-DSCH Resources Information</b>		<i>0..1</i>			YES	ignore
>>Resource Operational State	M		9.2.1.52		–	
>>Availability Status	M		9.2.1.2		–	
<b>&gt;E-DCH Resources Information</b>		<i>0..1</i>			<a href="#">YES</a>	<a href="#">ignore</a>
>>Resource Operational State	<a href="#">M</a>		<a href="#">9.2.1.52</a>		<a href="#">=</a>	
>>Availability Status	<a href="#">M</a>		<a href="#">9.2.1.2</a>		<a href="#">=</a>	

<b>Communication Control Port Information</b>		<i>0..&lt;maxC CPinNode B&gt;</i>			EACH	ignore
>Communication Control Port ID	M		9.2.1.15		–	
>Resource Operational State	M		9.2.1.52		–	
>Availability Status	M		9.2.1.2		–	
<b>Local Cell Information</b>		<i>0..&lt;maxLocalCellinNodeB&gt;</i>			EACH	ignore
>Local Cell ID	M		9.2.1.38		–	
>DL Or Global Capacity Credit	M		9.2.1.20B		–	
>UL Capacity Credit	O		9.2.1.65A		–	
>Common Channels Capacity Consumption Law	M		9.2.1.9A		–	
>Dedicated Channels Capacity Consumption Law	M		9.2.1.20A		–	
>Maximum DL Power Capability	O		9.2.1.39		–	
>Minimum Spreading Factor	O		9.2.1.47		–	
>Minimum DL Power Capability	O		9.2.1.46A		–	
>Local Cell Group ID	O		9.2.1.37A		–	
>Reference Clock Availability	O		9.2.3.14A	TDD only	YES	ignore
>Power Local Cell Group ID	O		9.2.1.49B		YES	ignore
>HSDPA Capability	O		9.2.1.31Ga		YES	ignore
<a href="#">&gt;E-DCH Capability</a>	<a href="#">O</a>		<a href="#">9.2.1.29aa</a>		<a href="#">YES</a>	<a href="#">ignore</a>
<b>Local Cell Group Information</b>		<i>0..&lt;maxLocalCellinNodeB&gt;</i>			EACH	ignore
>Local Cell Group ID	M		9.2.1.37A		–	
>DL Or Global Capacity Credit	M		9.2.1.20B		–	
>UL Capacity Credit	O		9.2.1.65A		–	
>Common Channels Capacity Consumption Law	M		9.2.1.9A		–	
>Dedicated Channels Capacity Consumption Law	M		9.2.1.20A		–	
Criticality Diagnostics	O		9.2.1.17		YES	ignore
<b>Power Local Cell Group Information</b>		<i>0..&lt;maxLocalCellinNodeB&gt;</i>			EACH	ignore
>Power Local Cell Group ID	M		9.2.1.49B		–	
>Maximum DL Power Capability	M		9.2.1.39		–	

Range Bound	Explanation
<i>maxCellinNodeB</i>	Maximum number of Cells that can be configured in Node B
<i>maxCCPinNodeB</i>	Maximum number of Communication Control Ports that can exist in the Node B
<i>maxCPCHCell</i>	Maximum number of CPCHs that can be defined in a Cell
<i>maxLocalCellinNodeB</i>	Maximum number of Local Cells that can exist in the Node B
<i>maxPCPCHCell</i>	Maximum number of PCPCHs that can be defined in a Cell
<i>maxSCPICHCell</i>	Maximum number of Secondary CPICHs that can be defined in a Cell.
<i>maxSCCPCHCell</i>	Maximum number of Secondary CCPCHs that can be defined in a Cell.
<i>maxFACHCell</i>	Maximum number of FACHs that can be defined in a Cell
<i>maxPRACHCell</i>	Maximum number of PRACHs that can be defined in a Cell
<i>maxRACHCell</i>	Maximum number of RACHs that can be defined in a Cell
<i>maxFPACHCell</i>	Maximum number of FPACHs that can be defined in a Cell

### 9.1.17A AUDIT FAILURE

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	reject
Transaction ID	M		9.2.1.62		–	
Cause	M		9.2.1.6		YES	ignore
Criticality diagnostics	O		9.2.1.17		YES	ignore



## 9.1.18 COMMON MEASUREMENT INITIATION REQUEST

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	reject
Transaction ID	M		9.2.1.62		–	
Measurement ID	M		9.2.1.42		YES	reject
CHOICE <i>Common Measurement Object Type</i>	M				YES	reject
>Cell					–	
>>C-ID	M		9.2.1.9		–	
>>Time Slot	O		9.2.3.23	Applicable to 3.84Mcps TDD only	–	
>>Time Slot LCR	O		9.2.3.24A	Applicable to 1.28Mcps TDD only	YES	reject
>>Neighbouring Cell Measurement Information		0..<maxno MeasNCells>			GLOBAL	ignore
>>>CHOICE Neighbouring Cell Measurement Information					–	
>>>>Neighbouring FDD Cell Measurement Information				FDD only	–	
>>>>Neighbouring FDD Cell Measurement Information	M		9.2.1.47C		–	
>>>>Neighbouring TDD Cell Measurement Information				Applicable to 3.84Mcps TDD only	–	
>>>>Neighbouring TDD Cell Measurement Information	M		9.2.1.47D		–	
>>>>Additional Neighbouring Cell Measurement Information					–	
>>>>Neighbouring TDD Cell Measurement Information LCR				Applicable to 1.28Mcps TDD only	–	
>>>>>Neighbouring TDD Cell Measurement Information LCR	M		9.2.1.47E		YES	reject
>RACH				FDD only	–	
>>C-ID	M		9.2.1.9		–	
>>Common Transport Channel ID	M		9.2.1.14		–	
>CPCH				FDD only	–	
>>C-ID	M		9.2.1.9		–	
>>Common Transport Channel ID	M		9.2.1.14		–	
>>Spreading Factor	O		Minimum UL Channelisation Code		–	

			Length 9.2.2.22			
Common Measurement Type	M		9.2.1.11		YES	reject
Measurement Filter Coefficient	O		9.2.1.41		YES	reject
Report Characteristics	M		9.2.1.51		YES	reject
SFN Reporting Indicator	M		FN Reporting Indicator 9.2.1.29B		YES	reject
SFN	O		9.2.1.53A		YES	reject
Common Measurement Accuracy	O		9.2.1.9B		YES	reject
Measurement Recovery Behavior	O		9.2.1.43A		YES	ignore

Range Bound	Explanation
<i>maxnoMeasNCells</i>	Maximum number of neighbouring cells that can be measured on.

## 9.1.19 COMMON MEASUREMENT INITIATION RESPONSE

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	reject
Transaction ID	M		9.2.1.62		–	
Measurement ID	M		9.2.1.42		YES	ignore
CHOICE <i>Common Measurement Object Type</i>	O			Common Measurement Object Type that the measurement was initiated with.	YES	ignore
> <i>Cell</i>					–	
>>Common Measurement Value	M		9.2.1.12		–	
> <i>RACH</i>				FDD only	–	
>>Common Measurement Value	M		9.2.1.12		–	
> <i>CPCH</i>				FDD only	–	
>>Common Measurement Value	M		9.2.1.12		–	
SFN	O		9.2.1.53A	Common Measurement Time Reference	YES	ignore
Criticality Diagnostics	O		9.2.1.17		YES	ignore
Common Measurement Achieved Accuracy	O		Common Measurement Accuracy 9.2.1.9B		YES	ignore
Measurement Recovery Support Indicator	O		9.2.1.43C		YES	ignore

## 9.1.20 COMMON MEASUREMENT INITIATION FAILURE

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	reject
Transaction ID	M		9.2.1.62		–	
Measurement ID	M		9.2.1.42		YES	ignore
Cause	M		9.2.1.6		YES	ignore
Criticality Diagnostics	O		9.2.1.17		YES	ignore

## 9.1.21 COMMON MEASUREMENT REPORT

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	ignore
Transaction ID	M		9.2.1.62		–	
Measurement ID	M		9.2.1.42		YES	ignore
CHOICE <i>Common Measurement Object Type</i>	M			Common Measurement Object Type that the measurement was initiated with.	YES	ignore
> <i>Cell</i>					–	
>>Common Measurement Value Information	M		9.2.1.12A		–	
> <i>RACH</i>				FDD only	–	
>>Common Measurement Value Information	M		9.2.1.12A		–	
> <i>CPCH</i>				FDD only	–	
>>Common Measurement Value Information	M		9.2.1.12A		–	
SFN	O		9.2.1.53A	Common Measurement Time Reference	YES	ignore
Measurement Recovery Reporting Indicator	O		9.2.1.43B		YES	ignore

## 9.1.22 COMMON MEASUREMENT TERMINATION REQUEST

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	ignore
Transaction ID	M		9.2.1.62		–	
Measurement ID	M		9.2.1.42		YES	ignore

### 9.1.23 COMMON MEASUREMENT FAILURE INDICATION

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	ignore
Transaction ID	M		9.2.1.62		–	
Measurement ID	M		9.2.1.42		YES	ignore
Cause	M		9.2.1.6		YES	ignore

### 9.1.24 CELL SETUP REQUEST

#### 9.1.24.1 FDD Message

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	reject
Transaction ID	M		9.2.1.62		–	
Local Cell ID	M		9.2.1.38		YES	reject
C-ID	M		9.2.1.9		YES	reject
Configuration Generation ID	M		9.2.1.16		YES	reject
T Cell	M		9.2.2.49		YES	reject
UARFCN	M		9.2.1.65	Corresponds to Nu [14]	YES	reject
UARFCN	M		9.2.1.65	Corresponds to Nd [14]	YES	reject

Maximum Transmission Power	M		9.2.1.40		YES	reject
Closed Loop Timing Adjustment Mode	O		9.2.2.2A		YES	reject
Primary Scrambling Code	M		9.2.2.34		YES	reject
<b>Synchronisation Configuration</b>		1			YES	reject
>N_INSYNC_IND	M		9.2.1.47A		–	
>N_OUTSYNC_IND	M		9.2.1.47B		–	
>T_RLFAILURE	M		9.2.1.56A		–	
DL TPC Pattern 01 Count	M		9.2.2.13A		YES	reject
<b>Primary SCH Information</b>		1			YES	reject
>Common Physical Channel ID	M		9.2.1.13		–	
>Primary SCH Power	M		DL Power 9.2.1.21		–	
>TSTD Indicator	M		9.2.1.64		–	
<b>Secondary SCH Information</b>		1			YES	reject
>Common Physical Channel ID	M		9.2.1.13		–	
>Secondary SCH Power	M		DL Power 9.2.1.21		–	
>TSTD Indicator	M		9.2.1.64		–	
<b>Primary CPICH Information</b>		1			YES	reject
>Common Physical Channel ID	M		9.2.1.13		–	
>Primary CPICH power	M		9.2.2.33		–	
>Transmit Diversity Indicator	M		9.2.2.53		–	
<b>Secondary CPICH Information</b>		$0..<maxS_{CPICHCell}>$			EACH	reject
>Common Physical Channel ID	M		9.2.1.13		–	
>DL Scrambling Code	M		9.2.2.13		–	
>FDD DL Channelisation Code Number	M		9.2.2.14		–	
>Secondary CPICH Power	M		DL Power 9.2.1.21		–	
>Transmit Diversity Indicator	M		9.2.2.53		–	
<b>Primary CCPCH Information</b>		1			YES	reject
>Common Physical Channel ID	M		9.2.1.13		–	
<b>&gt;BCH Information</b>		1			–	
>>Common Transport Channel ID	M		9.2.1.14		–	
>>BCH Power	M		DL Power 9.2.1.21		–	
>STTD Indicator	M		9.2.2.48		–	
<b>Limited Power Increase Information</b>		1			YES	reject
>Power_Raise_Limit	M		9.2.2.29A		–	
>DL_power_averaging_window_size	M		9.2.2.12A		–	
<b>IPDL Parameter Information</b>		0..1			YES	reject
>IPDL FDD Parameters	M		9.2.2.18C		–	
>IPDL Indicator	M		9.2.1.36F		–	
<b>PDSCH information</b>		0..1			YES	reject
>Maximum PDSCH Power	M		9.2.2.21A		–	
<b>Cell Portion Information</b>		$0..<maxno_{ofCellPortions}>$			EACH	reject
>Cell Portion ID	M		9.2.2.1Ca		–	
>Associated Secondary	M		Common		–	

CPICH			Physical Channel ID 9.2.1.13			
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Range Bound	Explanation
<i>maxSCPICHCell</i>	Maximum number of Secondary CPICHs that can be defined in a Cell.

## 9.1.24.2 TDD Message

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	reject
Transaction ID	M		9.2.1.62		–	
Local Cell ID	M		9.2.1.38		YES	reject
C-ID	M		9.2.1.9		YES	reject
Configuration Generation Id	M		9.2.1.16		YES	reject
UARFCN	M		9.2.1.65	Corresponds to Nt [15]	YES	reject
Cell Parameter ID	M		9.2.3.4		YES	reject
Maximum Transmission Power	M		9.2.1.40		YES	reject
Transmission Diversity Applied	M		9.2.3.26		YES	reject
Sync Case	M		9.2.3.18		YES	reject
<b>Synchronisation Configuration</b>		1			YES	reject
>N_INSYNC_IND	M		9.2.1.47A		–	
>N_OUTSYNC_IND	M		9.2.1.47B		–	
>T_RLFAILURE	M		9.2.1.56A		–	
DPCH Constant Value	M		Constant Value 9.2.3.4A	This IE shall be ignored by the Node B.	YES	reject
PUSCH Constant Value	M		Constant Value 9.2.3.4A	This IE shall be ignored by the Node B.	YES	reject
PRACH Constant Value	M		Constant Value 9.2.3.4A	This IE shall be ignored by the Node B.	YES	reject
Timing Advance Applied	M		9.2.3.22A		YES	reject
<b>SCH Information</b>		0..1		Mandatory for 3.84Mcps TDD. Not Applicable to 1.28Mcps TDD.	YES	reject
>Common Physical Channel ID	M		9.2.1.13		–	
>CHOICE Sync Case	M				YES	reject
>>Case 1					–	
>>>Time Slot	M		9.2.3.23		–	
>>Case 2					–	
>>>SCH Time Slot	M		9.2.3.17		–	
>SCH Power	M		DL Power 9.2.1.21		–	
>TSTD Indicator	M		9.2.1.64		–	
<b>PCCPCH Information</b>		0..1		Mandatory for 3.84Mcps TDD. Not Applicable to 1.28Mcps TDD.	YES	reject
>Common Physical Channel ID	M		9.2.1.13		–	
>TDD Physical Channel Offset	M		9.2.3.20		–	
>Repetition Period	M		9.2.3.16		–	
>Repetition Length	M		9.2.3.15		–	
>PCCPCH Power	M		9.2.3.9		–	
>SCTD Indicator	M		9.2.3.30		–	
<b>Time Slot Configuration</b>		0..15		Mandatory for 3.84Mcps TDD. Not Applicable	GLOBAL	reject

				to 1.28Mcps TDD.		
>Time Slot	M		9.2.3.23		–	
>Time Slot Status	M		9.2.3.25		–	
>Time Slot Direction	M		9.2.3.24		–	
<b>Time Slot Configuration LCR</b>		0..7		Mandatory for 1.28Mcps TDD. Not Applicable to 3.84Mcps TDD.	GLOBAL	reject
>Time Slot LCR	M		9.2.3.24A		–	
>Time Slot Status	M		9.2.3.25		–	
>Time Slot Direction	M		9.2.3.24		–	
<b>PCCPCH Information LCR</b>		0..1		Mandatory for 1.28Mcps TDD. Not Applicable to 3.84Mcps TDD.	YES	reject
>Common Physical Channel ID	M		9.2.1.13		–	
>TDD Physical Channel Offset	M		9.2.3.20		–	
>Repetition Period	M		9.2.3.16		–	
>Repetition Length	M		9.2.3.15		–	
>PCCPCH Power	M		9.2.3.9		–	
>SCTD Indicator	M		9.2.3.30		–	
>TSTD Indicator	M		9.2.1.64		–	
<b>DwPCH Information</b>		0..1		Mandatory for 1.28Mcps TDD. Not Applicable to 3.84Mcps TDD.	YES	reject
>Common Physical Channel ID	M		9.2.1.13		–	
>TSTD Indicator	M		9.2.1.64		–	
>DwPCH Power	M		9.2.3.5B		–	
Reference SFN Offset	O		9.2.3.14B		YES	ignore
<b>IPDL Parameter Information</b>		0..1		Applicable to 3.84 Mcps TDD only	YES	reject
>IPDL TDD Parameters	M		9.2.3.5D		–	
>IPDL Indicator	M		9.2.1.36F		–	
<b>IPDL Parameter Information LCR</b>		0..1		Applicable to 1.28Mcps TDD only	YES	reject
>IPDL TDD Parameters LCR	M		9.2.3.5H		–	
>IPDL Indicator	M		9.2.1.36F		–	

## 9.1.25 CELL SETUP RESPONSE

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	reject
Transaction ID	M		9.2.1.62		–	
Criticality Diagnostics	O		9.2.1.17		YES	ignore



## 9.1.26 CELL SETUP FAILURE

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	reject
Transaction ID	M		9.2.1.62		–	
Cause	M		9.2.1.6		YES	ignore
Criticality Diagnostics	O		9.2.1.17		YES	ignore

## 9.1.27 CELL RECONFIGURATION REQUEST

## 9.1.27.1 FDD Message

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	reject
Transaction ID	M		9.2.1.62		–	
C-ID	M		9.2.1.9		YES	reject
Configuration Generation ID	M		9.2.1.16		YES	reject
Maximum Transmission Power	O		9.2.1.40		YES	reject
<b>Synchronisation Configuration</b>		0..1			YES	reject
>N_INSYNC_IND	M		9.2.1.47A		–	
>N_OUTSYNC_IND	M		9.2.1.47B		–	
>T_RLFAILURE	M		9.2.1.56A		–	
<b>Primary SCH Information</b>		0..1			YES	reject
>Common Physical Channel ID	M		9.2.1.13		–	
>Primary SCH Power	M		DL Power 9.2.1.21		–	
<b>Secondary SCH Information</b>		0..1			YES	reject
>Common Physical Channel ID	M		9.2.1.13		–	
>Secondary SCH Power	M		DL Power 9.2.1.21		–	
<b>Primary CPICH Information</b>		0..1			YES	reject
>Common Physical Channel ID	M		9.2.1.13		–	
>Primary CPICH Power	M		9.2.2.33		–	
<b>Secondary CPICH Information</b>		0..<maxSCPICHCell >			EACH	reject
>Common Physical Channel ID	M		9.2.1.13		–	
>Secondary CPICH Power	M		DL Power 9.2.1.21		–	
<b>Primary CCPCH Information</b>		0..1			YES	reject
<b>&gt;BCH Information</b>		1			–	
>>Common Transport Channel ID	M		9.2.1.14		–	
>>BCH Power	M		DL Power 9.2.1.21		–	
<b>IPDL Parameter Information</b>		0..1			YES	reject
>IPDL FDD Parameters	O		9.2.2.18C		–	
>IPDL Indicator	M		9.2.1.36F		–	
<b>PDSCH information</b>		0..1			YES	reject
>Maximum PDSCH Power	M		9.2.2.21A		–	

Range Bound	Explanation
maxSCPICHCell	Maximum number of Secondary CPICH that can be defined in a Cell.

## 9.1.27.2 TDD Message

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	reject
Transaction ID	M		9.2.1.62		–	
C-ID	M		9.2.1.9		YES	reject
Configuration Generation ID	M		9.2.1.16		YES	reject
<b>Synchronisation Configuration</b>		0..1			YES	reject
>N_INSYNC_IND	M		9.2.1.47A		–	
>N_OUTSYNC_IND	M		9.2.1.47B		–	
>T_RLFAILURE	M		9.2.1.56A		–	
Timing Advance Applied	O		9.2.3.22A		YES	reject
<b>SCH Information</b>		0..1		Applicable to 3.84Mcps TDD only	YES	reject
>Common Physical Channel ID	M		9.2.1.13		–	
>SCH Power	M		DL Power 9.2.1.21		–	
<b>PCCPCH Information</b>		0..1			YES	reject
>Common Physical Channel ID	M		9.2.1.13		–	
>PCCPCH Power	M		9.2.3.9		–	
Maximum Transmission Power	O		9.2.1.40		YES	reject
DPCH Constant Value	O		Constant Value 9.2.3.4A	This IE shall be ignored by the Node B.	YES	reject
PUSCH Constant Value	O		Constant Value 9.2.3.4A	This IE shall be ignored by the Node B.	YES	reject
PRACH Constant Value	O		Constant Value 9.2.3.4A	This IE shall be ignored by the Node B.	YES	reject
<b>Time Slot Configuration</b>		0..15		Mandatory for 3.84Mcps TDD. Not Applicable to 1.28Mcps TDD.	GLOBAL	reject
>Time Slot	M		9.2.3.23		–	
>Time Slot Status	M		9.2.3.25		–	
>Time Slot Direction	M		9.2.3.24		–	
<b>Time Slot Configuration LCR</b>		0..7		Mandatory for 1.28Mcps TDD. Not Applicable to 3.84Mcps TDD.	GLOBAL	reject
>Time Slot LCR	M		9.2.3.24A		–	
>Time Slot Status	M		9.2.3.25		–	
>Time Slot Direction	M		9.2.3.24		–	
<b>DwPCH Information</b>		0..1		Applicable to 1.28Mcps TDD only.	YES	reject
>Common Physical Channel ID	M		9.2.1.13		–	
>DwPCH Power	M		9.2.3.5B		–	
<b>IPDL Parameter Information</b>		0..1		Applicable to 3.84Mcps TDD only	YES	reject
>IPDL TDD Parameters	O		9.2.3.5D		–	
>IPDL Indicator	M		9.2.1.36F		–	
<b>IPDL Parameter Information</b>		0..1		Applicable to	YES	reject

<b>LCR</b>				1.28Mcps TDD only		
>IPDL TDD Parameters LCR	O		9.2.3.5H		–	
>IPDL Indicator	M		9.2.1.36F		–	

### 9.1.28 CELL RECONFIGURATION RESPONSE

IE/Group Name	Presence	Range	IE Type and Reference	Semantics description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	reject
Transaction ID	M		9.2.1.62		–	
Criticality Diagnostics	O		9.2.1.17		YES	ignore

### 9.1.29 CELL RECONFIGURATION FAILURE

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	reject
Transaction ID	M		9.2.1.62		–	
Cause	M		9.2.1.6		YES	ignore
Criticality Diagnostics	O		9.2.1.17		YES	ignore

### 9.1.30 CELL DELETION REQUEST

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	reject
Transaction ID	M		9.2.1.62		–	
C-ID	M		9.2.1.9		YES	reject

### 9.1.31 CELL DELETION RESPONSE

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	reject
Transaction ID	M		9.2.1.62		–	
Criticality Diagnostics	O		9.2.1.17		YES	ignore

## 9.1.32 RESOURCE STATUS INDICATION

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	ignore
Transaction ID	M		9.2.1.62		–	
CHOICE <i>Indication Type</i>	M				YES	ignore
> <i>No Failure</i>					–	
>>Local Cell Information		1..<maxLocalCellinNodeB>			EACH	ignore
>>>Local Cell ID	M		9.2.1.38		–	
>>>Add/Delete Indicator	M		9.2.1.1		–	
>>>DL Or Global Capacity Credit	C-add		9.2.1.20B		–	
>>>UL Capacity Credit	O		9.2.1.65A		–	
>>>Common Channels Capacity Consumption Law	C-add		9.2.1.9A		–	
>>>Dedicated Channels Capacity Consumption Law	C-add		9.2.1.20A		–	
>>>Maximum DL Power Capability	C-add		9.2.1.39		–	
>>>Minimum Spreading Factor	C-add		9.2.1.47		–	
>>>Minimum DL Power Capability	C-add		9.2.1.46A		–	
>>>Local Cell Group ID	O		9.2.1.37A		–	
>>>Reference Clock Availability	O		9.2.3.14A	TDD only	YES	ignore
>>>Power Local Cell Group ID	O		9.2.1.49B		YES	ignore
>>>HSDPA Capability	O		9.2.1.31Ga		YES	ignore
>>>E-DCH Capability	<u>O</u>		<u>9.2.1.29aa</u>		<u>YES</u>	<u>ignore</u>
>>Local Cell Group Information		0..<maxLocalCellinNodeB>			EACH	ignore
>>>Local Cell Group ID	M		9.2.1.37A		–	
>>>DL Or Global Capacity Credit	M		9.2.1.20B		–	
>>>UL Capacity Credit	O		9.2.1.65A		–	
>>>Common Channels Capacity Consumption Law	M		9.2.1.9A		–	
>>>Dedicated Channels Capacity Consumption Law	M		9.2.1.20A		–	
>>Power Local Cell Group Information		0..<maxLocalCellinNodeB>			EACH	ignore
>>>Power Local Cell Group ID	M		9.2.1.49B		–	
>>>Maximum DL Power Capability	M		9.2.1.39		–	
> <i>Service Impacting</i>					–	
>>Local Cell Information		0..<maxLo			EACH	ignore

		<i>calCellinNodeB&gt;</i>				
>>>Local Cell ID	M		9.2.1.38		–	
>>>DL Or Global Capacity Credit	O		9.2.1.20B		–	
>>>UL Capacity Credit	O		9.2.1.65A		–	
>>>Common Channels Capacity Consumption Law	O		9.2.1.9A		–	
>>>Dedicated Channels Capacity Consumption Law	O		9.2.1.20A		–	
>>>Maximum DL Power Capability	O		9.2.1.39		–	
>>>Minimum Spreading Factor	O		9.2.1.47		–	
>>>Minimum DL Power Capability	O		9.2.1.46A		–	
>>>Reference Clock Availability	O		9.2.3.14A	TDD only	YES	ignore
>>>HSDPA Capability	O		9.2.1.31Ga		YES	ignore
>>>E-DCH Capability	<u>O</u>		<u>9.2.1.29aa</u>		<u>YES</u>	<u>ignore</u>
<b>&gt;&gt;Local Cell Group Information</b>		<i>0..&lt;maxLocalCellinNodeB&gt;</i>			EACH	ignore
>>>Local Cell Group ID	M		9.2.1.37A		–	
>>>DL Or Global Capacity Credit	O		9.2.1.20B		–	
>>>UL Capacity Credit	O		9.2.1.65A		–	
>>>Common Channels Capacity Consumption Law	O		9.2.1.9A		–	
>>>Dedicated Channels Capacity Consumption Law	O		9.2.1.20A		–	
<b>&gt;&gt;Communication Control Port Information</b>		<i>0..&lt;maxCPCPinNodeB&gt;</i>			EACH	ignore
>>>Communication Control Port ID	M		9.2.1.15		–	
>>>Resource Operational State	M		9.2.1.52		–	
>>>Availability Status	M		9.2.1.2		–	
<b>&gt;&gt;Cell Information</b>		<i>0..&lt;maxCellinNodeB&gt;</i>			EACH	ignore
>>>C-ID	M		9.2.1.9		–	
>>>Resource Operational State	O		9.2.1.52		–	
>>>Availability Status	O		9.2.1.2		–	
>>>Primary SCH Information	O		Common Physical Channel Status Information 9.2.1.13A	FDD only	YES	ignore
>>>Secondary SCH Information	O		Common Physical Channel Status	FDD only	YES	ignore

			Information 9.2.1.13A			
>>>Primary CPICH Information	O		Common Physical Channel Status Information 9.2.1.13A	FDD only	YES	ignore
>>>>Secondary CPICH Information		$0..<maxS\ CPICHCell >$		FDD only	EACH	ignore
>>>>Secondary CPICH Individual Information	M		Common Physical Channel Status Information 9.2.1.13A		–	
>>>Primary CCPCH Information	O		Common Physical Channel Status Information 9.2.1.13A		YES	ignore
>>>BCH Information	O		Common Transport Channel Status Information 9.2.1.14B		YES	ignore
>>>>Secondary CCPCH Information		$0..<maxS\ CCPCHCell >$			EACH	ignore
>>>>Secondary CCPCH Individual Information	M		Common Physical Channel Status Information 9.2.1.13A		–	
>>>PCH Information	O		Common Transport Channel Status Information 9.2.1.14B		YES	ignore
>>>PICH Information	O		Common Physical Channel Status Information 9.2.1.13A		YES	ignore
>>>>FACH Information		$0..<maxFA\ CHCell >$			EACH	ignore
>>>>FACH Individual Information	M		Common Transport Channel Status Information 9.2.1.14B		–	
>>>>PRACH Information		$0..<maxP\ RACHCell >$			EACH	ignore
>>>>PRACH Individual Information	M		Common Physical Channel Status Information 9.2.1.13A		–	

<b>&gt;&gt;&gt;RACH Information</b>		<i>0..&lt;maxP RACHCell &gt;</i>			EACH	ignore
>>>>RACH Individual Information	M		Common Transport Channel Status Information 9.2.1.14B		–	
<b>&gt;&gt;&gt;AICH Information</b>		<i>0..&lt;maxP RACHCell &gt;</i>		FDD only	EACH	ignore
>>>>AICH Individual Information	M		Common Physical Channel Status Information 9.2.1.13A		–	
<b>&gt;&gt;&gt;PCPCH Information</b>		<i>0..&lt;maxP CPCHCell &gt;</i>		FDD only	EACH	ignore
>>>>PCPCH Individual Information	M		Common Physical Channel Status Information 9.2.1.13A		–	
<b>&gt;&gt;&gt;CPCH Information</b>		<i>0..&lt;maxC PCHCell&gt;</i>		FDD only	EACH	ignore
>>>>CPCH Individual Information	M		Common Transport Channel Status Information 9.2.1.14B		–	
<b>&gt;&gt;&gt;AP-AICH Information</b>		<i>0..&lt;maxC PCHCell&gt;</i>		FDD only	EACH	ignore
>>>>AP-AICH Individual Information	M		Common Physical Channel Status Information 9.2.1.13A		–	
<b>&gt;&gt;&gt;CD/CA-ICH Information</b>		<i>0..&lt;maxC PCHCell&gt;</i>		FDD only	EACH	ignore
>>>>CD/CA-ICH Individual Information	M		Common Physical Channel Status Information 9.2.1.13A		–	
>>>>SCH Information	O		Common Physical Channel Status Information 9.2.1.13A	Applicable to 3.84Mcps TDD only	YES	ignore
<b>&gt;&gt;&gt;FPACH Information</b>		<i>0..&lt;maxFP ACHCell&gt;</i>		Applicable to 1.28Mcps TDD only	EACH	ignore
>>>>FPACH Individual Information	M		Common Physical Channel Status Information 9.2.1.13A		–	



>>>DwPCH Information	O		Common Physical Channel Status Information 9.2.1.13A	Applicable to 1.28Mcps TDD only	YES	ignore
>>>HS-DSCH Resources Information		0..1			YES	ignore
>>>>Resource Operational State	M		9.2.1.52		-	
>>>>Availability Status	M		9.2.1.2		-	
>>>E-DCH Resources Information		0..1			YES	ignore
>>>>Resource Operational State	M		9.2.1.52		=	
>>>>Availability Status	M		9.2.1.2		=	
>>Power Local Cell Group Information		0..<maxLocalCellinNodeB>			EACH	ignore
>>>Power Local Cell Group ID	M		9.2.1.49B		-	
>>>Maximum DL Power Capability	M		9.2.1.39		-	
Cause	O		9.2.1.6		YES	ignore

Condition	Explanation
add	The IE shall be present if the Add/Delete Indicator IE is set to "Add".

Range Bound	Explanation
maxLocalCellinNodeB	Maximum number of Local Cells that can exist in the Node B
maxCellinNodeB	Maximum number of C-IDs that can be configured in the Node B
maxCPCHCell	Maximum number of CPCHs that can be defined in a Cell
maxSCPICHCell	Maximum number of Secondary CPICHs that can be defined in a Cell.
maxSCCPCHCell	Maximum number of Secondary CCPCHs that can be defined in a Cell.
maxFACHCell	Maximum number of FACHs that can be defined in a Cell
maxPCPCHCell	Maximum number of PCPCHs that can be defined in a Cell
maxPRACHCell	Maximum number of PRACHs and AICHs that can be defined in a Cell
maxCCPinNodeB	Maximum number of Communication Control Ports that can exist in the Node B
maxFPACHCell	Maximum number of FPACHs that can be defined in a Cell

### 9.1.33 SYSTEM INFORMATION UPDATE REQUEST

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		-	
Message Type	M		9.2.1.46		YES	reject
Transaction ID	M		9.2.1.62		-	

C-ID	M		9.2.1.9		YES	reject
BCCH Modification Time	O		9.2.1.3		YES	reject
<b>MIB/SB/SIB Information</b>		<i>1..&lt;maxIB&gt;</i>			GLOBAL	reject
>IB Type	M		9.2.1.35		–	
>IB OC ID	M		9.2.1.31A	In one message, every occurrence of IB Type can only be deleted once and/or added once.	–	
>CHOICE <i>IB Deletion Indicator</i>	M				–	
>> <i>No Deletion</i>					–	
>>>SIB Originator	C-SIB		9.2.1.55		–	
>>>IB SG REP	O		9.2.1.34		–	
<b>&gt;&gt;&gt;Segment Information</b>		<i>1..&lt;maxIB SEG&gt;</i>			GLOBAL	reject
>>>>IB SG POS	O		9.2.1.33		–	
>>>>Segment Type	C-CRNCOrigination		9.2.1.53B		–	
>>>>IB SG DATA	C-CRNCOrigination		9.2.1.32		–	
>> <i>Deletion</i>			NULL		–	

Range bound	Explanation
<i>maxIB</i>	Maximum number of information Blocks supported in one message
<i>maxIBSEG</i>	Maximum number of segments for one Information Block

Condition	Explanation
CRNCOrigination	The IE shall be present if the <i>SIB Originator</i> IE is set to "CRNC" or if the <i>IB Type</i> IE is set to "MIB", "SB1" or "SB2".
SIB	The IE shall be present if the <i>IB Type</i> IE is set to "SIB".

### 9.1.34 SYSTEM INFORMATION UPDATE RESPONSE

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	reject
Transaction ID	M		9.2.1.62		–	
Criticality Diagnostics	O		9.2.1.17		YES	ignore

## 9.1.35 SYSTEM INFORMATION UPDATE FAILURE

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	reject
Transaction ID	M		9.2.1.62		–	
Cause	M		9.2.1.6		YES	ignore
Criticality Diagnostics	O		9.2.1.17		YES	ignore

## 9.1.36 RADIO LINK SETUP REQUEST

## 9.1.36.1 FDD message

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	reject
Transaction ID	M		9.2.1.62		–	
CRNC Communication Context ID	M		9.2.1.18	The reserved value "All CRNCCC" shall not be used.	YES	reject
<b>UL DPCH Information</b>		1			YES	reject
>UL Scrambling Code	M		9.2.2.59		–	
>Min UL Channelisation Code Length	M		9.2.2.22		–	
>Max Number of UL DPDCHs	C-CodeLen		9.2.2.21		–	
>Puncture Limit	M		9.2.1.50	For UL	–	
>TFCS	M		9.2.1.58	For UL	–	
>UL DPCCH Slot Format	M		9.2.2.57		–	
>UL SIR Target	M		UL SIR 9.2.1.67A		–	
>Diversity Mode	M		9.2.2.9		–	
>SSDT Cell ID Length	O		9.2.2.45		–	
>S Field Length	O		9.2.2.40		–	
>DPC Mode	O		9.2.2.13C		YES	reject
>UL DPDCH Indicator For E-DCH Operation	C-ifEDPCHInfo		ENUMERATED (UL-DPDCH present, UL-DPDCH not present)		YES	reject
<b>E-DPCH Information</b>		0..1			YES	reject
>Min UL Channelisation Code Length For E-DCH FDD	M		9.2.2.22a		–	
>Max Number Of UL E-DPDCHs	C-CodeLenE-DCH		9.2.2.20B	more than one E-DPDCHs possible in case of SF=[2 or 4]	–	
>Puncture Limit	M		9.2.1.50		–	
>E-TFCS	M		9.2.1.29ag		–	
>E-TTI	M		ENUMERATED (2ms, 10ms)		–	
<b>DL DPCH Information</b>		1			YES	reject
>TFCS	M		9.2.1.58	For DL	–	
>DL DPCH Slot Format	M		9.2.2.10		–	
>TFCI Signalling Mode	M		9.2.2.50		–	
>TFCI Presence	C-SlotFormat		9.2.1.57		–	
>Multiplexing Position	M		9.2.2.23		–	
>PDSCH RL ID	C-DSCH		RL ID 9.2.1.53		–	
>PDSCH Code Mapping	C-DSCH		9.2.2.25		–	
<b>&gt;Power Offset Information</b>		1			–	

>>PO1	M		Power Offset 9.2.2.29	Power offset for the TFCI bits	–	
>>PO2	M		Power Offset 9.2.2.29	Power offset for the TPC bits	–	
>>PO3	M		Power Offset 9.2.2.29	Power offset for the pilot bits	–	
>FDD TPC DL Step Size	M		9.2.2.16		–	
>Limited Power Increase	M		9.2.2.18A		–	
>Inner Loop DL PC Status	M		9.2.2.18B		–	
DCH Information	M		DCH FDD Information 9.2.2.4D		YES	reject
DSCH Information	O		DSCH FDD Information 9.2.2.13B		YES	reject
<b>TFCI2 Bearer Information</b>		0..1			YES	ignore
>ToAWS	M		9.2.1.61		–	
>ToAWE	M		9.2.1.60		–	
>Binding ID	O		9.2.1.4	Shall be ignored if bearer establishment with ALCAP.	YES	ignore
>Transport Layer Address	O		9.2.1.63	Shall be ignored if bearer establishment with ALCAP.	YES	ignore
<b>RL Information</b>		1..<maxno ofRLs>			EACH	notify
>RL ID	M		9.2.1.53		–	
>C-ID	M		9.2.1.9		–	
>First RLS Indicator	M		9.2.2.16A		–	
>Frame Offset	M		9.2.1.31		–	
>Chip Offset	M		9.2.2.2		–	
>Propagation Delay	O		9.2.2.35		–	
>Diversity Control Field	C-NotFirstRL		9.2.1.25		–	
>DL Code Information	M		FDD DL Code Information 9.2.2.14A		–	
>Initial DL Transmission Power	M		DL Power 9.2.1.21	Initial power on DPCH	–	
>Maximum DL Power	M		DL Power 9.2.1.21	Maximum allowed power on DPCH	–	
>Minimum DL Power	M		DL Power 9.2.1.21	Minimum allowed power on DPCH	–	
>SSDT Cell Identity	O		9.2.2.44		–	
>Transmit Diversity Indicator	C-Diversity mode		9.2.2.53		–	
>SSDT Cell Identity For EDSCHPC	C-EDSCHPC		9.2.2.44A		YES	ignore
>RL Specific DCH Information	O		9.2.1.53G		YES	ignore
>Delayed Activation	O		9.2.1.24C		YES	reject
>Qth Parameter	O		9.2.2.36A		YES	ignore
>Primary CPICH Usage For	O		9.2.2.33A		YES	ignore

Channel Estimation						
>Secondary CPICH Information	O		Common Physical Channel ID 9.2.1.13		YES	ignore
>E-DCH RL Indication	O		9.2.2.13De		YES	reject
Transmission Gap Pattern Sequence Information	O		9.2.2.53A		YES	reject
Active Pattern Sequence Information	O		9.2.2.A		YES	reject
DSCH Common Information	O		DSCH FDD Common Information 9.2.2.13D		YES	ignore
DL Power Balancing Information	O		9.2.2.12B		YES	ignore
HS-DSCH Information	O		HS-DSCH FDD Information 9.2.2.18D		YES	reject
HS-DSCH-RNTI	C-InfoHSDSCH		9.2.1.31J		YES	reject
HS-PDSCH RL ID	C-InfoHSDSCH		RL ID 9.2.1.53		YES	reject
E-DCH FDD Information	C-EDPCHInfo		9.2.2.13Da		YES	reject
Serving E-DCH RL	C-EDPCHInfo		9.2.1.53Ha		YES	reject

Condition	Explanation
CodeLen	The IE shall be present if <i>Min UL Channelisation Code Length</i> IE equals to 4.
NotFirstRL	The IE shall be present if the RL is not the first one in the <i>RL Information</i> IE.
DSCH	The IE shall be present if the <i>DSCH Information</i> IE is present.
SlotFormat	The IE shall be present if the <i>DL DPCH Slot Format</i> IE is equal to any of the values from 12 to 16.
Diversity mode	The IE shall be present if <i>Diversity Mode</i> IE in <i>UL DPCH Information</i> IE is not set to "none".
EDSCHPC	The IE shall be present if <i>Enhanced DSCH PC</i> IE is present in the <i>DSCH Common Information</i> IE.
InfoHSDSCH	The IE shall be present if <i>HS-DSCH Information</i> IE is present.
EDPCHInfo	<a href="#">This IE shall be present if E-DPCH Information IE is present.</a>
CodeLenEDCH	<a href="#">The IE shall be present if Min UL Channelisation Code Length For E-DCH FDD IE equals [2 or 4]</a>

Range Bound	Explanation
<i>maxnoofRLs</i>	Maximum number of RLs for one UE

## 9.1.36.2 TDD message

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	reject
Transaction ID	M		9.2.1.62		–	
CRNC Communication Context ID	M		9.2.1.18	The reserved value "All CRNCCC" shall not be used.	YES	reject
<b>UL CCTrCH Information</b>		<i>0..&lt;maxno CCTrCH&gt;</i>			EACH	notify
>CCTrCH ID	M		9.2.3.3		–	
>TFCS	M		9.2.1.58		–	
>TFCI Coding	M		9.2.3.22		–	
>Puncture Limit	M		9.2.1.50		–	
<b>&gt;UL DPCH Information</b>		<i>0..1</i>		Applicable to 3.84Mcps TDD only	YES	notify
>>Repetition Period	M		9.2.3.16		–	
>>Repetition Length	M		9.2.3.15		–	
>>TDD DPCH Offset	M		9.2.3.19A		–	
>>UL Timeslot Information	M		9.2.3.26C		–	
<b>&gt;UL DPCH Information LCR</b>		<i>0..1</i>		Applicable to 1.28Mcps TDD only	YES	notify
>>Repetition Period	M		9.2.3.16		–	
>>Repetition Length	M		9.2.3.15		–	
>>TDD DPCH Offset	M		9.2.3.19A		–	
>>UL Timeslot Information LCR	M		9.2.3.26E		–	
>UL SIR Target	O		UL SIR 9.2.1.67A	Mandatory for 1.28Mcps TDD. Not Applicable to 3.84Mcps TDD.	YES	reject
>TDD TPC UL Step Size	O		9.2.3.21a	Mandatory for 1.28Mcps TDD. Not Applicable to 3.84Mcps TDD.	YES	reject
<b>DL CCTrCH Information</b>		<i>0..&lt;maxno CCTrCH&gt;</i>			EACH	notify
>CCTrCH ID	M		9.2.3.3		–	
>TFCS	M		9.2.1.58		–	
>TFCI Coding	M		9.2.3.22		–	
>Puncture Limit	M		9.2.1.50		–	
>TDD TPC DL Step Size	M		9.2.3.21		–	
<b>&gt;TPC CCTrCH List</b>		<i>0..&lt;maxno CCTrCH&gt;</i>		List of uplink CCTrCH which provide TPC	–	
>>TPC CCTrCH ID	M		CCTrCH ID 9.2.3.3		–	
<b>&gt;DL DPCH information</b>		<i>0..1</i>		Applicable to 3.84Mcps TDD only	YES	notify
>>Repetition Period	M		9.2.3.16		–	
>>Repetition Length	M		9.2.3.15		–	
>>TDD DPCH Offset	M		9.2.3.19A		–	

>>DL Timeslot Information	M		9.2.3.4E		–	
<b>&gt;DL DPCH information LCR</b>		0..1		Applicable to 1.28Mcps TDD only	YES	notify
>>Repetition Period	M		9.2.3.16		–	
>>Repetition Length	M		9.2.3.15		–	
>>TDD DPCH Offset	M		9.2.3.19A		–	
>>DL Timeslot Information LCR	M		9.2.3.4O		–	
>>TSTD Indicator	M		9.2.1.64		–	
>CCTrCH Initial DL Transmission Power	O		DL Power 9.2.1.21		YES	ignore
>CCTrCH Maximum DL Transmission Power	O		DL Power 9.2.1.21		YES	ignore
>CCTrCH Minimum DL Transmission Power	O		DL Power 9.2.1.21		YES	ignore
DCH Information	O		DCH TDD Information 9.2.3.4C		YES	reject
DSCH Information	O		DSCH TDD Information 9.2.3.5A		YES	reject
USCH Information	O		9.2.3.28		YES	reject
<b>RL Information</b>		1			YES	reject
>RL ID	M		9.2.1.53		–	
>C-ID	M		9.2.1.9		–	
>Frame Offset	M		9.2.1.31		–	
>Special Burst Scheduling	M		9.2.3.18A		–	
>Initial DL Transmission Power	M		DL Power 9.2.1.21		–	
>Maximum DL Power	M		DL Power 9.2.1.21		–	
>Minimum DL Power	M		DL Power 9.2.1.21		–	
>DL Time Slot ISCP Info	O		9.2.3.4F	Applicable to 3.84Mcps TDD only	–	
>DL Time Slot ISCP Info LCR	O		9.2.3.4P	Applicable to 1.28Mcps TDD only	YES	reject
>RL Specific DCH Information	O		9.2.1.53G		YES	ignore
>Delayed Activation	O		9.2.1.24C		YES	reject
<b>&gt;UL Synchronisation Parameters LCR</b>		0..1		Mandatory for 1.28Mcps TDD. Not Applicable to 3.84Mcps TDD.	YES	ignore
>>Uplink Synchronisation Step Size	M		9.2.3.26H		–	
>>Uplink Synchronisation Frequency	M		9.2.3.26G		–	
HS-DSCH Information	O		HS-DSCH TDD Information 9.2.3.5F		YES	reject
HS-DSCH-RNTI	C-InfoHSDSCH		9.2.1.31J		YES	reject
HS-PDSCH RL ID	C-InfoHSDSCH		RL ID 9.2.1.53		YES	reject



	CH					
PDSCH-RL-ID	O		RL ID 9.2.1.53		YES	ignore

Range Bound	Explanation
<i>maxnoCCTrCH</i>	Number of CCTrCHs for one UE

Condition	Explanation
InfoHSDSCH	The IE shall be present if <i>HS-DSCH Information</i> IE is present.

## 9.1.37 RADIO LINK SETUP RESPONSE

## 9.1.37.1 FDD message

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	reject
Transaction ID	M		9.2.1.62		–	
CRNC Communication Context ID	M		9.2.1.18	The reserved value "All CRNCCC" shall not be used.	YES	ignore
Node B Communication Context ID	M		9.2.1.48	The reserved value "All NBCC" shall not be used.	YES	ignore
Communication Control Port ID	M		9.2.1.15		YES	ignore
<b>RL Information Response</b>		<i>1..&lt;maxno ofRLs&gt;</i>			EACH	ignore
>RL ID	M		9.2.1.53		–	
>RL Set ID	M		9.2.2.39		–	
>Received Total Wide Band Power	M		9.2.2.39A		–	
>CHOICE <i>Diversity Indication</i>	M				–	
>> <i>Combining</i>					–	
>>>RL ID	M		9.2.1.53	Reference RL ID for the combining	–	
>> <i>Non Combining or First RL</i>					–	
>>>DCH Information Response	M		9.2.1.20C		–	
>DSCH Information Response	O		9.2.1.27A		YES	ignore
>SSDT Support Indicator	M		9.2.2.46		–	
>DL Power Balancing Activation Indicator	O		9.2.2.12C		YES	ignore
>E-DCH RL Set ID	<u>Q</u>		<a href="#">9.2.2.39</a>		<a href="#">YES</a>	<a href="#">ignore</a>
>E-DCH FDD DL Control Channel Information	<u>Q</u>		<a href="#">9.2.2.13Dc</a>		<a href="#">YES</a>	<a href="#">ignore</a>
TFCI2 Bearer Information Response	O		9.2.2.49A		YES	ignore
Criticality Diagnostics	O		9.2.1.17		YES	ignore
HS-DSCH Information Response	O		HS-DSCH FDD Information Response 9.2.2.18E		YES	ignore
E-DCH FDD Information Response	<u>Q</u>		<a href="#">9.2.2.13Db</a>		<a href="#">YES</a>	<a href="#">ignore</a>

Range Bound	Explanation
<i>maxnoofRLs</i>	Maximum number of RLs for one UE

## 9.1.37.2 TDD Message

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	reject
Transaction ID	M		9.2.1.62		–	
CRNC Communication Context ID	M		9.2.1.18	The reserved value "All CRNCCC" shall not be used.	YES	ignore
Node B Communication Context ID	M		9.2.1.48	The reserved value "All NBCC" shall not be used.	YES	ignore
Communication Control Port ID	M		9.2.1.15		YES	ignore
<b>RL Information Response</b>		0..1		Mandatory for 3.84Mcps TDD. Not Applicable to 1.28Mcps TDD.	YES	ignore
>RL ID	M		9.2.1.53		–	
>UL Time Slot ISCP Info	M		9.2.3.26D		–	
>UL PhysCH SF Variation	M		9.2.3.26B		–	
>DCH Information Response	O		9.2.1.20C		YES	ignore
>DSCH Information Response	O		9.2.1.27A		YES	ignore
>USCH Information Response	O		9.2.3.29		YES	ignore
Criticality Diagnostics	O		9.2.1.17		YES	ignore
<b>RL Information Response LCR</b>		0..1		Mandatory for 1.28Mcps TDD. Not Applicable to 3.84Mcps TDD.	YES	ignore
>RL ID	M		9.2.1.53		–	
>UL Time Slot ISCP Info LCR	M		9.2.3.26F		–	
>UL PhysCH SF Variation	M		9.2.3.26B		–	
>DCH Information Response	O		9.2.1.20C		YES	ignore
>DSCH Information Response	O		9.2.1.27A		YES	ignore
>USCH Information Response	O		9.2.3.29		YES	ignore
HS-DSCH Information Response	O		HS-DSCH TDD Information Response 9.2.3.5G		YES	ignore

## 9.1.38 RADIO LINK SETUP FAILURE

## 9.1.38.1 FDD Message

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	reject
Transaction ID	M		9.2.1.62		–	
CRNC Communication Context ID	M		9.2.1.18	The reserved value "All CRNCCC" shall not be used.	YES	ignore
Node B Communication Context ID	C-Success		9.2.1.48	The reserved value "All NBCC" shall not be used	YES	ignore
Communication Control Port ID	O		9.2.1.15		YES	ignore
CHOICE <i>Cause Level</i>	M				YES	ignore
> <i>General</i>					–	
>> <i>Cause</i>	M		9.2.1.6		–	
> <i>RL Specific</i>					–	
>> <b>Unsuccessful RL Information Response</b>		1..<maxno ofRLs>			EACH	ignore
>>>RL ID	M		9.2.1.53		–	
>>>Cause	M		9.2.1.6		–	
>> <b>Successful RL Information Response</b>		0..<maxno ofRLs>		Note: There will never be maxnoofRLs repetitions of this sequence.	EACH	ignore
>>>RL ID	M		9.2.1.53		–	
>>>RL Set ID	M		9.2.2.39		–	
>>>Received Total Wide Band Power	M		9.2.2.39A		–	
>>>CHOICE <i>Diversity Indication</i>	M				–	
>>>> <i>Combining</i>					–	
>>>>>RL ID	M		9.2.1.53	Reference RL ID for the combining	–	
>>>> <i>Non Combining or First RL</i>					–	
>>>>>DCH Information Response	M		9.2.1.20C		–	
>>>DSCH Information Response	O		9.2.1.27A		YES	ignore
>>>TFCI2 Bearer Information Response	O		9.2.2.49A	There shall be only one TFCI2 bearer per Node B Communication Context.	–	
>>>SSDT Support Indicator	M		9.2.2.46		–	
>>>DL Power Balancing Activation Indicator	O		9.2.2.12C		YES	ignore

>>>E-DCH RL Set ID	O		9.2.2.39		YES	ignore
>>>E-DCH FDD DL Control Channel Information	O		9.2.2.13Dc		YES	ignore
>>HS-DSCH Information Response	O		HS-DSCH FDD Information Response 9.2.2.18E		YES	ignore
>>E-DCH Information Response	O		E-DCH FDD Information Response 9.2.2.13Db		YES	ignore
Criticality Diagnostics	O		9.2.1.17		YES	ignore

Condition	Explanation
Success	The IE shall be present if at least one of the radio links has been successfully set up.

Range Bound	Explanation
<i>maxnoofRLs</i>	Maximum number of RLs for one UE

### 9.1.38.2 TDD Message

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	reject
Transaction ID	M		9.2.1.62		–	
CRNC Communication Context ID	M		9.2.1.18	The reserved value "All CRNCCC" shall not be used.	YES	ignore
CHOICE Cause Level	M				YES	ignore
>General					–	
>>Cause	M		9.2.1.6		–	
>RL Specific					–	
>>Unsuccessful RL Information Response		1			YES	ignore
>>>RL ID	M		9.2.1.53		–	
>>>Cause	M		9.2.1.6		–	
Criticality Diagnostics	O		9.2.1.17		YES	ignore

## 9.1.39 RADIO LINK ADDITION REQUEST

## 9.1.39.1 FDD Message

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	reject
Transaction ID	M		9.2.1.62		–	
Node B Communication Context ID	M		9.2.1.48	The reserved value "All NBCC" shall not be used.	YES	reject
Compressed Mode Deactivation Flag	O		9.2.2.3A		YES	reject
<b>RL Information</b>		<i>1..&lt;maxno ofRLs-1&gt;</i>			EACH	notify
>RL ID	M		9.2.1.53		–	
>C-ID	M		9.2.1.9		–	
>Frame Offset	M		9.2.1.31		–	
>Chip Offset	M		9.2.2.2		–	
>Diversity Control Field	M		9.2.1.25		–	
>DL Code Information	M		FDD DL Code Information 9.2.2.14A		–	
>Initial DL Transmission Power	O		DL Power 9.2.1.21	Initial power on DPCH	–	
>Maximum DL Power	O		DL Power 9.2.1.21	Maximum allowed power on DPCH	–	
>Minimum DL Power	O		DL Power 9.2.1.21	Minimum allowed power on DPCH	–	
>SSDT Cell Identity	O		9.2.2.44		–	
>Transmit Diversity Indicator	O		9.2.2.53		–	
>DL Reference Power	O		DL power 9.2.1.21	Power on DPCH	YES	ignore
>RL Specific DCH Information	O		9.2.1.53G		YES	ignore
<a href="#">&gt;E-DCH RL Indication</a>	<a href="#">O</a>		<a href="#">9.2.2.13De</a>		<a href="#">YES</a>	<a href="#">reject</a>
>Delayed Activation	O		9.2.1.24C		YES	reject
>Qth Parameter	O		9.2.2.36A		YES	ignore
>Primary CPICH Usage For Channel Estimation	O		9.2.2.33A		YES	ignore

Range Bound	Explanation
<i>maxnoofRLs</i>	Maximum number of RLs for one UE

## 9.1.39.2 TDD Message

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	reject
Transaction ID	M		9.2.1.62		–	
Node B Communication Context ID	M		9.2.1.48	The reserved value "All NBCC" shall not be used.	YES	reject
<b>UL CCTrCH Information</b>		<i>0..&lt;maxno CCTrCH&gt;</i>			GLOBAL	reject
>CCTrCH ID	M		9.2.3.3		–	
<b>&gt;UL DPCH Information</b>		<i>0..1</i>		Applicable to 3.84Mcps TDD only	YES	notify
>>Repetition Period	M		9.2.3.16		–	
>>Repetition Length	M		9.2.3.15		–	
>>TDD DPCH Offset	M		9.2.3.19A		–	
>>UL Timeslot Information	M		9.2.3.26C		–	
<b>&gt;UL DPCH Information LCR</b>		<i>0..1</i>		Applicable to 1.28Mcps TDD only	YES	notify
>>Repetition Period	M		9.2.3.16		–	
>>Repetition Length	M		9.2.3.15		–	
>>TDD DPCH Offset	M		9.2.3.19A		–	
>>UL Timeslot Information LCR	M		9.2.3.26E		–	
>TDD TPC UL Step Size	O		9.2.3.21a	Applicable to 1.28Mcps TDD only	YES	reject
<b>DL CCTrCH Information</b>		<i>0..&lt;maxno CCTrCH&gt;</i>			GLOBAL	reject
>CCTrCH ID	M		9.2.3.3		–	
<b>&gt;DL DPCH information</b>		<i>0..1</i>		Applicable to 3.84Mcps TDD only	YES	notify
>>Repetition Period	M		9.2.3.16		–	
>>Repetition Length	M		9.2.3.15		–	
>>TDD DPCH Offset	M		9.2.3.19A		–	
>>DL Timeslot Information	M		9.2.3.4E		–	
<b>&gt;DL DPCH information LCR</b>		<i>0..1</i>		Applicable to 1.28Mcps TDD only	YES	notify
>>Repetition Period	M		9.2.3.16		–	
>>Repetition Length	M		9.2.3.15		–	
>>TDD DPCH Offset	M		9.2.3.19A		–	
>>DL Timeslot Information LCR	M		9.2.3.4O		–	
>CCTrCH Initial DL Transmission Power	O		DL Power 9.2.1.21		YES	ignore
>TDD TPC DL Step Size	O		9.2.3.21		YES	reject
>CCTrCH Maximum DL Transmission Power	O		DL Power 9.2.1.21		YES	ignore
>CCTrCH Minimum DL Transmission Power	O		DL Power 9.2.1.21		YES	ignore
<b>RL Information</b>		<i>1</i>			YES	reject

>RL ID	M		9.2.1.53		–	
>C-ID	M		9.2.1.9		–	
>Frame Offset	M		9.2.1.31		–	
>Diversity Control Field	M		9.2.1.25		–	
>Initial DL Transmission Power	O		DL Power 9.2.1.21		–	
>Maximum DL Power	O		DL Power 9.2.1.21		–	
>Minimum DL Power	O		DL Power 9.2.1.21		–	
>DL Time Slot ISCP Info	O		9.2.3.4F	Applicable to 3.84Mcps TDD only	–	
>DL Time Slot ISCP Info LCR	O		9.2.3.4P	Applicable to 1.28Mcps TDD only	YES	reject
>RL Specific DCH Information	O		9.2.1.53G		YES	ignore
>Delayed Activation	O		9.2.1.24C		YES	reject
<b>&gt;UL Synchronisation Parameters LCR</b>		0..1		Mandatory for 1.28Mcps TDD. Not Applicable to 3.84Mcps TDD.	YES	ignore
>>Uplink Synchronisation Step Size	M		9.2.3.26H		–	
>>Uplink Synchronisation Frequency	M		9.2.3.26G		–	

Range Bound	Explanation
<i>maxnoCCTrCH</i>	Number of CCTrCH for one UE



## 9.1.40 RADIO LINK ADDITION RESPONSE

## 9.1.40.1 FDD message

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	reject
Transaction ID	M		9.2.1.62		–	
CRNC Communication Context ID	M		9.2.1.18	The reserved value "All CRNCCC" shall not be used.	YES	ignore
<b>RL Information Response</b>		<i>1..&lt;maxno ofRLs-1&gt;</i>			EACH	ignore
>RL ID	M		9.2.1.53		–	
>RL Set ID	M		9.2.2.39		–	
>Received Total Wide Band Power	M		9.2.2.39A		–	
>CHOICE <i>Diversity Indication</i>	M				–	
>> <i>Combining</i>					–	
>>>RL ID	M		9.2.1.53	Reference RL	–	
>> <i>Non Combining</i>					–	
>>>DCH Information Response	M		9.2.1.20C		–	
>SSDT Support Indicator	M		9.2.2.46		–	
>DL Power Balancing Activation Indicator	O		9.2.2.12C		YES	ignore
>E-DCH RL Set ID	<u>O</u>		<a href="#">9.2.2.39</a>		<a href="#">YES</a>	<a href="#">ignore</a>
>E-DCH FDD DL Control Channel Information	<u>O</u>		<a href="#">9.2.2.13Dc</a>		<a href="#">YES</a>	<a href="#">ignore</a>
Criticality Diagnostics	O		9.2.1.17		YES	ignore

Range Bound	Explanation
<i>maxnoofRLs</i>	Maximum number of RLs for one UE

## 9.1.40.2 TDD Message

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	reject
Transaction ID	M		9.2.1.62		–	
CRNC Communication Context ID	M		9.2.1.18	The reserved value "All CRNCCC" shall not be used.	YES	ignore
<b>RL Information Response</b>		0..1		Mandatory for 3.84Mcps TDD. Not Applicable to 1.28Mcps TDD.	YES	ignore
>RL ID	M		9.2.1.53		–	
>UL Time Slot ISCP Info	M		9.2.3.26D		–	
>UL PhysCH SF Variation	M		9.2.3.26B		–	
<b>&gt;DCH Information</b>		0..1			–	
>>CHOICE <i>Diversity Indication</i>	M				–	
>>> <i>Combining</i>				Indicates whether the old Transport Bearer shall be reused or not	–	
>>>>RL ID	M		9.2.1.53	Reference RL	–	
>>>> <i>Non Combining</i>					–	
>>>>DCH Information Response	M		9.2.1.20C		–	
>DSCH Information Response	O		9.2.1.27A		YES	ignore
>USCH Information Response	O		9.2.3.29		YES	ignore
Criticality Diagnostics	O		9.2.1.17		YES	ignore
<b>RL Information Response LCR</b>		0..1		Mandatory for 1.28Mcps TDD. Not Applicable to 3.84Mcps TDD.	YES	ignore
>RL ID	M		9.2.1.53		–	
>UL Time Slot ISCP Info LCR	M		9.2.3.26F		–	
>UL PhysCH SF Variation	M		9.2.3.26B		–	
<b>&gt;DCH Information</b>		0..1			–	
>>CHOICE <i>Diversity indication</i>	M				–	
>>> <i>Combining</i>				Indicates whether the old Transport Bearer shall be reused or not	–	
>>>>RL ID	M		9.2.1.53	Reference RL	–	
>>>> <i>Non Combining</i>					–	
>>>>DCH Information Response	M		9.2.1.20C		–	
>DSCH Information Response	O		9.2.1.27A		YES	ignore
>USCH Information	O		9.2.3.29		YES	ignore

Response						
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## 9.1.41 RADIO LINK ADDITION FAILURE

### 9.1.41.1 FDD Message

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	reject
Transaction ID	M		9.2.1.62		–	
CRNC Communication Context ID	M		9.2.1.18	The reserved value "All CRNCCC" shall not be used.	YES	ignore
CHOICE <i>Cause Level</i>	M				YES	ignore
> <i>General</i>					–	
>> <i>Cause</i>	M		9.2.1.6		–	
> <i>RL Specific</i>					–	
>> <b>Unsuccessful RL Information Response</b>		1..<maxno ofRLs-1>			EACH	ignore
>>>RL ID	M		9.2.1.53		–	
>>>Cause	M		9.2.1.6		–	
>> <b>Successful RL Information Response</b>		0..<maxno ofRLs-2>			EACH	ignore
>>>RL ID	M		9.2.1.53		–	
>>>RL Set ID	M		9.2.2.39		–	
>>> Received Total Wide Band Power	M		9.2.2.39A		–	
>>>CHOICE <i>Diversity Indication</i>	M				–	
>>>> <i>Combining</i>					–	
>>>>>RL ID	M		9.2.1.53	Reference RL	–	
>>>>> <i>Non Combining</i>					–	
>>>>>DCH Information Response	M		9.2.1.20C		–	
>>>SSDT Support Indicator	M		9.2.2.46		–	
>>>DL Power Balancing Activation Indicator	O		9.2.2.12C		YES	ignore
>>>>E-DCH RL Set ID	<u>O</u>		<u>9.2.2.39</u>		<u>YES</u>	<u>ignore</u>
>>>>E-DCH FDD DL Control Channel Information	<u>O</u>		<u>9.2.2.13Dc</u>		<u>YES</u>	<u>ignore</u>
Criticality Diagnostics	O		9.2.1.17		YES	ignore

Range Bound	Explanation
<i>maxnoofRLs</i>	Maximum number of RLs for one UE

## 9.1.41.2 TDD Message

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	reject
Transaction ID	M		9.2.1.62		–	
CRNC Communication Context ID	M		9.2.1.18	The reserved value "All CRNCCC" shall not be used.	YES	ignore
CHOICE Cause Level	M				YES	ignore
>General					–	
>>Cause	M		9.2.1.6		–	
>RL Specific					–	
>>Unsuccessful RL Information Response		1			YES	ignore
>>>RL ID	M		9.2.1.53		–	
>>>Cause	M		9.2.1.6		–	
Criticality Diagnostics	O		9.2.1.17		YES	ignore

## 9.1.42 RADIO LINK RECONFIGURATION PREPARE

## 9.1.42.1 FDD Message

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	reject
Transaction ID	M		9.2.1.62		–	
Node B Communication Context ID	M		9.2.1.48	The reserved value "All NBCC" shall not be used.	YES	reject
<b>UL DPCH Information</b>		<i>0..1</i>			YES	reject
>UL Scrambling Code	O		9.2.2.59		–	
>UL SIR Target	O		UL SIR 9.2.1.67A		–	
>Min UL Channelisation Code Length	O		9.2.2.22		–	
>Max Number of UL DPDCHs	C-CodeLen		9.2.2.21		–	
>Puncture Limit	O		9.2.1.50	For UL	–	
>TFCS	O		9.2.1.58		–	
>UL DPCCH Slot Format	O		9.2.2.57		–	
>Diversity Mode	O		9.2.2.9		–	
>SSDT Cell Identity Length	O		9.2.2.45		–	
>S-Field Length	O		9.2.2.40		–	
>UL DPDCH Indicator For E-DCH Operation	C-ifEDPCHIn fo		ENUMERATED (UL-DPDCH present, UL-DPDCH not present)		YES	reject
<b>DL DPCH Information</b>		<i>0..1</i>			YES	reject
>TFCS	O		9.2.1.58		–	
>DL DPCH Slot Format	O		9.2.2.10		–	
>TFCI Signalling Mode	O		9.2.2.50		–	
>TFCI Presence	C-SlotFormat		9.2.1.57		–	
>Multiplexing Position	O		9.2.2.23		–	
>PDSCH Code Mapping	O		9.2.2.25		–	
>PDSCH RL ID	O		RL ID 9.2.1.53		–	
>Limited Power Increase	O		9.2.2.18A		–	
<b>E-DPCH Information</b>		<i>0..1</i>			YES	reject
>Min UL Channelisation Code Length For E-DCH FDD	O		9.2.2.22a		–	
>Max Number Of UL E-DPDCHs	C-CodeLenE DCH		9.2.2.20B	more than one E-DPDCHs possible in case of SF=[2 or 4]	–	
>Puncture Limit	O		9.2.1.50		–	
>E-TFCS	O		9.2.1.29ag		–	
>E-TTI	O		ENUMERATED (2ms, 10ms)		–	

DCHs To Modify	O		DCHs FDD To Modify 9.2.2.4E		YES	reject
DCHs To Add	O		DCH FDD Information 9.2.2.4D		YES	reject
<b>DCHs To Delete</b>		<i>0..&lt;maxno ofDCHs&gt;</i>			GLOBAL	reject
>DCH ID	M		9.2.1.20		–	
<b>DSCH To Modify</b>		<i>0..&lt;maxno ofDSCHs&gt;</i>			EACH	reject
>DSCH ID	M		9.2.1.27		–	
>Transport Format Set	O		9.2.1.59	For the DL.	–	
>Allocation/Retention Priority	O		9.2.1.1A		–	
>Frame Handling Priority	O		9.2.1.30		–	
>ToAWS	O		9.2.1.61		–	
>ToAWE	O		9.2.1.60		–	
>Transport Bearer Request Indicator	M		9.2.1.62A		–	
>Binding ID	O		9.2.1.4	Shall be ignored if bearer establishment with ALCAP.	YES	ignore
>Transport Layer Address	O		9.2.1.63	Shall be ignored if bearer establishment with ALCAP.	YES	ignore
DSCH To Add	O		DSCH FDD Information 9.2.2.13B		YES	reject
<b>DSCH To Delete</b>		<i>0..&lt;maxno ofDSCHs&gt;</i>			EACH	reject
>DSCH ID	M		9.2.1.27		–	
<b>TFCI2 Bearer Information</b>		<i>0..1</i>			YES	reject
>CHOICE <i>TFCI2 Bearer Action</i>	M				–	
>> <i>Add or modify</i>					–	
>>>ToAWS	M		9.2.1.61		–	
>>>ToAWE	M		9.2.1.60		–	
>>>TFCI2 Bearer Request Indicator	O		9.2.1.56C		YES	reject
>>>Binding ID	O		9.2.1.4	Shall be ignored if bearer establishment with ALCAP.	YES	ignore
>>>Transport Layer Address	O		9.2.1.63	Shall be ignored if bearer establishment with ALCAP.	YES	ignore
>> <i>Delete</i>			NULL		–	
<b>RL Information</b>		<i>0..&lt;maxno ofRLs&gt;</i>			EACH	reject
>RL ID	M		9.2.1.53		–	
>DL Code Information	O		FDD DL Code Information 9.2.2.14A		–	

>Maximum DL Power	O		DL Power 9.2.1.21	Maximum allowed power on DPCH	–	
>Minimum DL Power	O		DL Power 9.2.1.21	Minimum allowed power on DPCH	–	
>SSDT Indication	O		9.2.2.47		–	
>SSDT Cell Identity	C- SSDTIndO N		9.2.2.44		–	
>Transmit Diversity Indicator	C-Diversity mode		9.2.2.53		–	
>SSDT Cell Identity For EDSCHPC	C- EDSCHPC		9.2.2.44A		YES	ignore
>DL Reference Power	O		DL Power 9.2.1.21	Power on DPCH	YES	ignore
>RL Specific DCH Information	O		9.2.1.53G		YES	ignore
>DL DPCH Timing Adjustment	O		9.2.2.10A	Required RL Timing Adjustment	YES	reject
>Qth Parameter	O		9.2.2.36A		YES	ignore
>Primary CPICH Usage For Channel Estimation	O		9.2.2.33A		YES	ignore
>Secondary CPICH Information Change	O		9.2.2.43A		YES	ignore
<a href="#">&gt;E-DCH RL Indication</a>	<a href="#">O</a>		<a href="#">9.2.2.13De</a>		<a href="#">YES</a>	<a href="#">reject</a>
Transmission Gap Pattern Sequence Information	O		9.2.2.53A		YES	reject
DSCH Common Information	O		DSCH FDD Common Information 9.2.2.13D		YES	ignore
Signalling Bearer Request Indicator	O		9.2.1.55A		YES	reject
HS-DSCH Information	O		HS-DSCH FDD Information 9.2.2.18D		YES	reject
HS-DSCH Information To Modify	O		9.2.1.31H		YES	reject
HS-DSCH MAC-d Flows To Add	O		HS-DSCH MAC-d Flows Information 9.2.1.31IA		YES	reject
HS-DSCH MAC-d Flows To Delete	O		9.2.1.31IB		YES	reject
HS-DSCH-RNTI	C- HSDSCH RadioLink		9.2.1.31J		YES	reject
HS-PDSCH RL ID	O		RL ID 9.2.1.53		YES	reject
<a href="#">E-DCH FDD Information</a>	<a href="#">O</a>		<a href="#">E-DCH FDD Information 9.2.2.13Da</a>		<a href="#">YES</a>	<a href="#">reject</a>
<a href="#">E-DCH FDD Information To Modify</a>	<a href="#">O</a>		<a href="#">9.2.2.13Df</a>		<a href="#">YES</a>	<a href="#">reject</a>
<a href="#">E-DCH MAC-d Flows To Add</a>	<a href="#">O</a>		<a href="#">E-DCH MAC-d Flows</a>		<a href="#">YES</a>	<a href="#">reject</a>

			<a href="#">Information 9.2.2.29ab</a>			
<a href="#">E-DCH MAC-d Flows To Delete</a>	<a href="#">O</a>		<a href="#">9.2.1.29ac</a>		<a href="#">YES</a>	<a href="#">reject</a>
<a href="#">Serving E-DCH RL</a>	<a href="#">O</a>		<a href="#">9.2.1.53Ha</a>		<a href="#">YES</a>	<a href="#">reject</a>

Condition	Explanation
SSDTIndON	The IE shall be present if the <i>SSDT Indication IE</i> is set to "SSDT Active in the UE".
CodeLen	The IE shall be present if the <i>Min UL Channelisation Code Length IE</i> is equals to 4.
SlotFormat	The IE shall be present if the <i>DL DPCH Slot Format IE</i> is equal to any of the values from 12 to 16.
Diversity mode	The IE shall be present if the <i>Diversity Mode IE</i> is present in the <i>UL DPCH Information IE</i> and is not set to "none".
EDSCHPC	The IE shall be present if the <i>Enhanced DSCH PC IE</i> is present in the <i>DSCH Common Information IE</i> .
HSDSCHRadio Link	The IE shall be present if <i>HS-PDSCH RL ID IE</i> is present.
<a href="#">EDPCHInfo</a>	<a href="#">This IE shall be present if <i>E-DPCH Information IE</i> is present.</a>
<a href="#">CodeLenEDCH</a>	<a href="#">The IE shall be present if <i>Min UL Channelisation Code Length For E-DCH FDD IE</i> equals [2 or 4]</a>

Range Bound	Explanation
<i>maxnoofDCHs</i>	Maximum number of DCHs for a UE
<i>maxnoofDSCHs</i>	Maximum number of DSCHs for a UE
<i>maxnoofRLs</i>	Maximum number of RLs for a UE



## 9.1.42.2 TDD Message

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	reject
Transaction ID	M		9.2.1.62		–	
Node B Communication Context ID	M		9.2.1.48	The reserved value "All NBCC" shall not be used.	YES	reject
<b>UL CCTrCH To Add</b>		<i>0..&lt;maxno of CCTrCHs&gt;</i>			GLOBAL	reject
>CCTrCH ID	M		9.2.3.3		–	
>TFCS	M		9.2.1.58		–	
>TFCI Coding	M		9.2.3.22		–	
>Puncture Limit	M		9.2.1.50		–	
<b>&gt;UL DPCH To Add Per RL</b>		<i>0..&lt;maxno of RLS&gt;</i>		See note 1 below	–	
<b>&gt;&gt;UL DPCH Information</b>		<i>0..1</i>		Applicable to 3.84Mcps TDD only	YES	reject
>>>Repetition Period	M		9.2.3.16		–	
>>>Repetition Length	M		9.2.3.15		–	
>>>TDD DPCH Offset	M		9.2.3.19A		–	
>>>UL Timeslot Information	M		9.2.3.26C		–	
<b>&gt;&gt;UL DPCH Information LCR</b>		<i>0..1</i>		Applicable to 1.28Mcps TDD only	YES	reject
>>>Repetition Period	M		9.2.3.16		–	
>>>Repetition Length	M		9.2.3.15		–	
>>>TDD DPCH Offset	M		9.2.3.19A		–	
>>>UL Timeslot Information LCR	M		9.2.3.26E		–	
>>UL SIR Target	O		UL SIR 9.2.1.67A	Mandatory for 1.28Mcps TDD. Not Applicable to 3.84Mcps TDD	YES	reject
>>TDD TPC UL Step Size	O		9.2.3.21a	Mandatory for 1.28Mcps TDD. Not Applicable to 3.84Mcps TDD.	YES	reject
>>RL ID	O		9.2.1.53		YES	ignore
<b>UL CCTrCH To Modify</b>		<i>0..&lt;maxno of CCTrCHs&gt;</i>			GLOBAL	reject
>CCTrCH ID	M		9.2.3.3		–	
>TFCS	O		9.2.1.58		–	
>TFCI Coding	O		9.2.3.22		–	
>Puncture Limit	O		9.2.1.50		–	
<b>&gt;UL DPCH To Modify Per RL</b>		<i>0..&lt;maxno of RLS&gt;</i>		See note 1 below	–	
<b>&gt;&gt;UL DPCH To Add</b>		<i>0..1</i>		Applicable to 3.84Mcps TDD only	YES	reject
>>>Repetition Period	M		9.2.3.16		–	
>>>Repetition Length	M		9.2.3.15		–	

>>>TDD DPCH Offset	M		9.2.3.19A		–	
>>>UL Timeslot Information	M		9.2.3.26C		–	
<b>&gt;&gt;UL DPCH To Modify</b>		0..1			YES	reject
>>>Repetition Period	O		9.2.3.16		–	
>>>Repetition Length	O		9.2.3.15		–	
>>>TDD DPCH Offset	O		9.2.3.19A		–	
<b>&gt;&gt;&gt;UL Timeslot Information</b>		0..<maxno ofULts>		Applicable to 3.84Mcps TDD only	–	
>>>>Time Slot	M		9.2.3.23		–	
>>>>Midamble Shift And Burst Type	O		9.2.3.7		–	
>>>>TFCI Presence	O		9.2.1.57		–	
<b>&gt;&gt;&gt;&gt;UL Code Information</b>		0..<maxno ofDPCHs>			–	
>>>>>DPCH ID	M		9.2.3.5		–	
>>>>>TDD Channelisation Code	O		9.2.3.19		–	
<b>&gt;&gt;&gt;UL Timeslot Information LCR</b>		0..<maxno ofULtsLCR >		Applicable to 1.28Mcps TDD only	GLOBAL	reject
>>>>Time Slot LCR	M		9.2.3.24A		–	
>>>>Midamble Shift LCR	O		9.2.3.7A			
>>>>TFCI Presence	O		9.2.1.57		–	
<b>&gt;&gt;&gt;&gt;UL Code Information LCR</b>		0..<maxno OfDPCHLCR>			–	
>>>>>DPCH ID	M		9.2.3.5		–	
>>>>>TDD Channelisation Code LCR	O		9.2.3.19a		–	
>>>>> TDD UL DPCH Time Slot Format LCR	O		9.2.3.21C		YES	reject
<b>&gt;&gt;UL DPCH To Delete</b>		0..<maxno ofDPCHs>			GLOBAL	reject
>>>DPCH ID	M		9.2.3.5		–	
<b>&gt;&gt;UL DPCH To Add LCR</b>		0..1		Applicable to 1.28Mcps TDD only	YES	reject
>>>Repetition Period	M		9.2.3.16		–	
>>>Repetition Length	M		9.2.3.15		–	
>>>TDD DPCH Offset	M		9.2.3.19A		–	
>>>UL Timeslot Information LCR	M		9.2.3.26E		–	
>>UL SIR Target	O		UL SIR 9.2.1.67A	Applicable to 1.28Mcps TDD only	YES	reject
>>TDD TPC UL Step Size	O		9.2.3.21a	Applicable to 1.28Mcps TDD only	YES	reject
>>RL ID	O		9.2.1.53		YES	ignore
<b>UL CCTrCH To Delete</b>		0..<maxno ofCCTrCH s>			GLOBAL	reject
>CCTrCH ID	M		9.2.3.3		–	
<b>DL CCTrCH To Add</b>		0..<maxno ofCCTrCH s>			GLOBAL	reject

>CCTrCH ID	M		9.2.3.3		–	
>TFCS	M		9.2.1.58		–	
>TFCI Coding	M		9.2.3.22		–	
>Puncture Limit	M		9.2.1.50		–	
<b>&gt;TPC CCTrCH List</b>		<i>0..&lt;maxno of CCTrCHs&gt;</i>		List of uplink CCTrCH which provide TPC	–	
>>TPC CCTrCH ID	M		CCTrCH ID 9.2.3.3		–	
<b>&gt;DL DPCH To Add Per RL</b>		<i>0..&lt;maxno of RLs&gt;</i>		See Note 1 below	–	
>>DL DPCH Information		<i>0..1</i>		Applicable to 3.84Mcps TDD only	YES	reject
>>>Repetition Period	M		9.2.3.16		–	
>>>Repetition Length	M		9.2.3.15		–	
>>>TDD DPCH Offset	M		9.2.3.19A		–	
>>>DL Timeslot Information	M		9.2.3.4E		–	
<b>&gt;&gt;DL DPCH Information LCR</b>		<i>0..1</i>		Applicable to 1.28Mcps TDD only	YES	reject
>>>Repetition Period	M		9.2.3.16		–	
>>>Repetition Length	M		9.2.3.15		–	
>>>TDD DPCH Offset	M		9.2.3.19A		–	
>>>DL Timeslot Information LCR	M		9.2.3.4O		–	
>>CCTrCH Initial DL Transmission Power	O		DL Power 9.2.1.21		YES	ignore
>>TDD TPC DL Step Size	O		9.2.3.21		YES	reject

>>CCTrCH Maximum DL Transmission Power	O		DL Power 9.2.1.21		YES	ignore
>>CCTrCH Minimum DL Transmission Power	O		DL Power 9.2.1.21		YES	ignore
>>RL ID	O		9.2.1.53		YES	ignore reject
<b>DL CCTrCH To Modify</b>		<i>0..&lt;maxno ofCCTrCHs&gt;</i>			GLOBAL	reject
>CCTrCH ID	M		9.2.3.3		–	
>TFCS	O		9.2.1.58		–	
>TFCI Coding	O		9.2.3.22		–	
>Puncture Limit	O		9.2.1.50		–	
<b>&gt;TPC CCTrCH List</b>		<i>0..&lt;maxno ofCCTrCHs&gt;</i>		List of uplink CCTrCH which provide TPC	–	
>>TPC CCTrCH ID	M		CCTrCH ID 9.2.3.3		–	
<b>&gt;DL DPCH To Modify Per RL</b>		<i>0..&lt;maxno ofRLs&gt;</i>		See Note 1 below	–	
>>DL DPCH To Add		<i>0..1</i>		Applicable to 3.84Mcps TDD only	YES	reject
>>>Repetition Period	M		9.2.3.16		–	
>>>Repetition Length	M		9.2.3.15		–	
>>>TDD DPCH Offset	M		9.2.3.19A		–	
>>>DL Timeslot Information	M		9.2.3.4E		–	
<b>&gt;&gt;DL DPCH To Modify</b>		<i>0..1</i>			YES	reject
>>>Repetition Period	O		9.2.3.16		–	
>>>Repetition Length	O		9.2.3.15		–	
>>>TDD DPCH Offset	O		9.2.3.19A		–	
<b>&gt;&gt;&gt;DL Timeslot Information</b>		<i>0..&lt;maxno ofDLts&gt;</i>		Applicable to 3.84Mcps TDD only	–	
>>>>Time Slot	M		9.2.3.23		–	
>>>>Midamble Shift And Burst Type	O		9.2.3.7		–	
>>>>TFCI Presence	O		9.2.1.57		–	
<b>&gt;&gt;&gt;&gt;DL Code Information</b>		<i>0..&lt;maxno ofDPCHs&gt;</i>			–	
>>>>>DPCH ID	M		9.2.3.5		–	
>>>>>TDD Channelisation Code	O		9.2.3.19		–	
<b>&gt;&gt;&gt;&gt;DL Timeslot Information LCR</b>		<i>0..&lt;maxno ofDLtsLCR&gt;</i>		Applicable to 1.28Mcps TDD only	GLOBAL	reject
>>>>>Time Slot LCR	M		9.2.3.24A		–	
>>>>>Midamble Shift LCR	O		9.2.3.7A		–	
>>>>>TFCI Presence	O		9.2.1.57		–	
<b>&gt;&gt;&gt;&gt;&gt;DL Code Information LCR</b>		<i>0..&lt;maxno ofDPCHsLCR&gt;</i>			–	
>>>>>>DPCH ID	M		9.2.3.5		–	
>>>>>>TDD Channelisation Code LCR	O		9.2.3.19a		–	
>>>>>>TDD DL DPCH Time Slot Format LCR	O		9.2.3.19D		YES	reject

>>>>Maximum DL Power to Modify LCR	O		DL Power 9.2.1.21	Maximum allowed power on DPCH	YES	ignore
>>>>Minimum DL Power to Modify LCR	O		DL Power 9.2.1.21	Minimum allowed power on DPCH	YES	ignore
>>DL DPCH To Delete		<i>0..&lt;maxno ofDPCHs&gt;</i>			GLOBAL	reject
>>>DPCH ID	M		9.2.3.5		–	
>>DL DPCH To Add LCR		<i>0..1</i>		Applicable to 1.28Mcps TDD only	YES	reject
>>>Repetition Period	M		9.2.3.16		–	
>>>Repetition Length	M		9.2.3.15		–	
>>>TDD DPCH Offset	M		9.2.3.19A		–	
>>>DL Timeslot Information LCR	M		9.2.3.4O		–	
>>TDD TPC DL Step Size	O		9.2.3.21		YES	reject
>>Maximum CCTrCH DL Power to Modify	O		DL Power 9.2.1.21		YES	ignore
>>Minimum CCTrCH DL Power to Modify	O		DL Power 9.2.1.21		YES	ignore
>>RL ID	O		9.2.1.53		YES	ignore
DL CCTrCH To Delete		<i>0..&lt;maxno ofCCTrCHs&gt;</i>			GLOBAL	reject
>CCTrCH ID	M		9.2.3.3		–	
DCHs To Modify	O		DCHs TDD To Modify 9.2.3.4D		YES	reject
DCHs To Add	O		DCH TDD Information 9.2.3.4C		YES	reject
DCHs To Delete		<i>0..&lt;maxno ofDCHs&gt;</i>			GLOBAL	reject
>DCH ID	M		9.2.1.20		–	
DSCH To Modify		<i>0..&lt;maxno ofDSCHs&gt;</i>			GLOBAL	reject
>DSCH ID	M		9.2.1.27		–	
>CCTrCH ID	O		9.2.3.3	DL CCTrCH in which the DSCH is mapped	–	
>Transport Format Set	O		9.2.1.59		–	
>Allocation/Retention Priority	O		9.2.1.1A		–	
>Frame Handling Priority	O		9.2.1.30		–	
>ToAWS	O		9.2.1.61		–	
>ToAWE	O		9.2.1.60		–	
>Transport Bearer Request Indicator	M		9.2.1.62A		–	
>Binding ID	O		9.2.1.4	Shall be ignored if bearer establishment with ALCAP.	YES	ignore
>Transport Layer Address	O		9.2.1.63	Shall be ignored if bearer establishment with ALCAP.	YES	ignore
DSCH To Add	O		DSCH TDD Information		YES	reject

			9.2.3.5A			
<b>DSCH To Delete</b>		<i>0..&lt;maxno ofDSCHs&gt;</i>			GLOBAL	reject
>DSCH ID	M		9.2.1.27		–	
<b>USCH To Modify</b>		<i>0..&lt;maxno ofUSCHs&gt;</i>			GLOBAL	reject
>USCH ID	M		9.2.3.27		–	
>Transport Format Set	O		9.2.1.59		–	
>Allocation/Retention Priority	O		9.2.1.1A		–	
>CCTrCH ID	O		9.2.3.3	UL CCTrCH in which the USCH is mapped	–	
>Transport Bearer Request Indicator	M		9.2.1.62A		–	
>Binding ID	O		9.2.1.4	Shall be ignored if bearer establishment with ALCAP.	YES	ignore
>Transport Layer Address	O		9.2.1.63	Shall be ignored if bearer establishment with ALCAP.	YES	ignore
>TNL QoS	O		9.2.1.58A		YES	ignore
USCH To Add	O		USCH Information 9.2.3.28		YES	reject
<b>USCH To Delete</b>		<i>0..&lt;maxno ofUSCHs&gt;</i>			GLOBAL	reject
>USCH ID	M		9.2.3.27		–	
<b>RL Information</b>		<i>0..&lt;maxno ofRLs&gt;</i>		See Note 1 below	YES	reject
>RL ID	M		9.2.1.53		–	
>Maximum Downlink Power	O		DL Power 9.2.1.21		–	
>Minimum Downlink Power	O		DL Power 9.2.1.21		–	
>Initial DL Transmission Power	O		DL Power 9.2.1.21		YES	ignore
>RL Specific DCH Information	O		9.2.1.53G		YES	ignore
<b>&gt;UL Synchronisation Parameters LCR</b>		<i>0..1</i>		Mandatory for 1.28Mcps TDD. Not Applicable to 3.84Mcps TDD.	YES	ignore
>>Uplink Synchronisation Step Size	M		9.2.3.26H		–	
>>Uplink Synchronisation Frequency	M		9.2.3.26G		–	
>DL Time Slot ISCP Info LCR	O		9.2.3.4P	Applicable to 1.28Mcps TDD only	YES	ignore
Signalling Bearer Request Indicator	O		9.2.1.55A		YES	reject
HS-DSCH Information	O		HS-DSCH TDD Information 9.2.3.5F		YES	reject
HS-DSCH Information To	O		9.2.1.31H		YES	reject

Modify						
HS-DSCH MAC-d Flows To Add	O		HS-DSCH MAC-d Flows Information 9.2.1.31IA		YES	reject
HS-DSCH MAC-d Flows To Delete	O		9.2.1.31IB		YES	reject
HS-DSCH-RNTI	C-HSDSCH RadioLink		9.2.1.31J		YES	reject
HS-PDSCH RL ID	O		RL ID 9.2.1.53		YES	reject
PDSCH-RL-ID	O		RL ID 9.2.1.53		YES	ignore

Note 1: This information element is a simplified representation of the ASN.1. Repetition 1 and repetition 2 through *maxnoofRLs* are represented by separate ASN.1 structures with different criticalities.

Condition	Explanation
HSDSCHRadio Link	The IE shall be present if <i>HS-PDSCH RL ID</i> IE is present.

Range Bound	Explanation
<i>maxnoofDCHs</i>	Maximum number of DCHs for a UE
<i>maxnoofCCTrCHs</i>	Maximum number of CCTrCHs for a UE
<i>maxnoofDPCHs</i>	Maximum number of DPCHs in one CCTrCH for 3.84Mcps TDD
<i>maxnoofDPCHsLCR</i>	Maximum number of DPCHs in one CCTrCH for 1.28Mcps TDD
<i>maxnoofDSCHs</i>	Maximum number of DSCHs for one UE
<i>maxnoofUSCHs</i>	Maximum number of USCHs for one UE
<i>maxnoofDLts</i>	Maximum number of Downlink time slots per Radio Link for 3.84Mcps TDD
<i>maxnoofDLtsLCR</i>	Maximum number of Downlink time slots per Radio Link for 1.28Mcps TDD
<i>maxnoofULts</i>	Maximum number of Uplink time slots per Radio Link for 3.84Mcps TDD
<i>maxnoofULtsLCR</i>	Maximum number of Uplink time slots per Radio Link for 1.28Mcps TDD
<i>maxnoofRLs</i>	Maximum number of RLs for one UE

## 9.1.43 RADIO LINK RECONFIGURATION READY

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	reject
Transaction ID	M		9.2.1.62		–	
CRNC Communication Context ID	M		9.2.1.18	The reserved value "All CRNCCC" shall not be used.	YES	ignore
<b>RL Information Response</b>		<i>0..&lt;maxno ofRLs&gt;</i>			EACH	ignore
>RL ID	M		9.2.1.53		–	
>DCH Information Response	O		9.2.1.20C		YES	ignore
>DSCH Information Response	O		9.2.1.27A		YES	ignore
>USCH Information Response	O		9.2.3.29	TDD only	YES	ignore
>TFCI2 Bearer Information Response	O		9.2.2.49A	FDD only. There shall be only one TFCI2 bearer per Node B Communication Context.	–	
>DL Power Balancing Updated Indicator	O		9.2.2.12D		YES	ignore
<a href="#">&gt;E-DCH RL Set ID</a>	<a href="#">O</a>		<a href="#">9.2.2.39</a>		<a href="#">YES</a>	<a href="#">ignore</a>
<a href="#">&gt;E-DCH FDD DL Control Channel Information</a>	<a href="#">O</a>		<a href="#">9.2.2.13Dc</a>		<a href="#">YES</a>	<a href="#">ignore</a>
Criticality Diagnostics	O		9.2.1.17		YES	ignore
Target Communication Control Port ID	O		Communication Control Port ID 9.2.1.15		YES	ignore
HS-DSCH FDD Information Response	O		9.2.2.18E	FDD only	YES	ignore
HS-DSCH TDD Information Response	O		9.2.3.5G	TDD only	YES	ignore
<a href="#">E-DCH FDD Information Response</a>	<a href="#">O</a>		<a href="#">9.2.2.13Db</a>		<a href="#">YES</a>	<a href="#">ignore</a>

Range Bound	Explanation
<i>maxnoofRLs</i>	Maximum number of RLs for a UE



## 9.1.44 RADIO LINK RECONFIGURATION FAILURE

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	reject
Transaction ID	M		9.2.1.62		–	
CRNC Communication Context ID	M		9.2.1.18	The reserved value "All CRNCCC" shall not be used.	YES	ignore
CHOICE <i>Cause Level</i>	M				YES	ignore
> <i>General</i>					–	
>> <i>Cause</i>	M		9.2.1.6		YES	ignore
> <i>RL Specific</i>					–	
>> <b>RLs Causing Reconfiguration Failure</b>		0..<maxno ofRLs>			EACH	ignore
>>>RL ID	M		9.2.1.53		–	
>>>Cause	M		9.2.1.6		–	
Criticality Diagnostics	O		9.2.1.17		YES	ignore

Range Bound	Explanation
<i>maxnoofRLs</i>	Maximum number of RLs for a UE

## 9.1.45 RADIO LINK RECONFIGURATION COMMIT

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message type	M		9.2.1.46		YES	ignore
Transaction ID	M		9.2.1.62		–	
Node B Communication Context ID	M		9.2.1.48	The reserved value "All NBCC" shall not be used.	YES	ignore
CFN	M		9.2.1.7		YES	ignore
Active Pattern Sequence Information	O		9.2.2.A	FDD only	YES	ignore

## 9.1.46 RADIO LINK RECONFIGURATION CANCEL

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message type	M		9.2.1.46		YES	ignore
Transaction ID	M		9.2.1.62		–	
Node B Communication Context ID	M		9.2.1.48	The reserved value "All NBCC" shall not be used.	YES	ignore

## 9.1.47 RADIO LINK RECONFIGURATION REQUEST

## 9.1.47.1 FDD Message

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	reject
Transaction ID	M		9.2.1.62		–	
Node B Communication Context ID	M		9.2.1.48	The reserved value "All NBCC" shall not be used.	YES	reject
<b>UL DPCH Information</b>		<i>0..1</i>			YES	reject
>TFCS	O		9.2.1.58	For the UL.	–	
<a href="#">&gt;UL DPDCH Indicator For E-DCH Operation</a>	<a href="#">C-ifEDPCHInfo</a>		<a href="#">ENUMERATED (UL-DPDCH present, UL-DPDCH not present)</a>		<a href="#">YES</a>	<a href="#">reject</a>
<b>E-DPCH Information</b>		<i>0..1</i>			<a href="#">YES</a>	<a href="#">reject</a>
<a href="#">&gt;E-TFCS</a>	<a href="#">O</a>		<a href="#">9.2.1.29ag</a>		<a href="#">=</a>	
<b>DL DPCH Information</b>		<i>0..1</i>			YES	reject
>TFCS	O		9.2.1.58	For the DL.	–	
>TFCl Signalling Mode	O		9.2.2.50		–	
>Limited Power Increase	O		9.2.2.18A		–	
DCHs To Modify	O		DCHs FDD To Modify 9.2.2.4E		YES	reject
DCHs To Add	O		DCH FDD Information 9.2.2.4D		YES	reject
<b>DCHs To Delete</b>		<i>0..&lt;maxno ofDCHs&gt;</i>			GLOBAL	reject
>DCH ID	M		9.2.1.20		–	
<b>Radio Link Information</b>		<i>0..&lt;maxno ofRLs&gt;</i>			EACH	reject
>RL ID	M		9.2.1.53		–	
>Maximum DL Power	O		DL Power 9.2.1.21	Maximum allowed power on DPCH	–	
>Minimum DL Power	O		DL Power 9.2.1.21	Minimum allowed power on DPCH	–	
>DL Code Information	C-SF/2		FDD DL Code Information 9.2.2.14A		–	
>DL Reference Power	O		DL Power 9.2.1.21	Power on DPCH	YES	ignore
>RL Specific DCH Information	O		9.2.1.53G		YES	ignore
<a href="#">&gt;E-DCH RL Indication</a>	<a href="#">O</a>		<a href="#">9.2.2.13De</a>		<a href="#">YES</a>	<a href="#">reject</a>
Transmission Gap Pattern Sequence Information	O		9.2.2.53A		YES	reject
Signalling Bearer Request Indicator	O		9.2.1.55A		YES	reject
HS-DSCH Information	O		HS-DSCH FDD Information		YES	reject

			9.2.2.18D			
HS-DSCH Information To Modify Unsynchronised	O		9.2.1.31HA		YES	reject
HS-DSCH MAC-d Flows To Add	O		HS-DSCH MAC-d Flows Information 9.2.1.31IA		YES	reject
HS-DSCH MAC-d Flows To Delete	O		9.2.1.31IB		YES	reject
HS-DSCH-RNTI	C-HSDSCH RadioLink		9.2.1.31J		YES	reject
HS-PDSCH RL ID	O		RL ID 9.2.1.53		YES	reject
<a href="#">E-DCH FDD Information</a>	<a href="#">O</a>		<a href="#">E-DCH FDD Information 9.2.2.13Da</a>		<a href="#">YES</a>	<a href="#">reject</a>
<a href="#">E-DCH FDD Information To Modify</a>	<a href="#">O</a>		<a href="#">9.2.2.13Df</a>		<a href="#">YES</a>	<a href="#">reject</a>
<a href="#">E-DCH MAC-d Flows To Add</a>	<a href="#">O</a>		<a href="#">E-DCH FDD MAC-d Flows Information 9.2.2.29ab</a>		<a href="#">YES</a>	<a href="#">reject</a>
<a href="#">E-DCH MAC-d Flows To Delete</a>	<a href="#">O</a>		<a href="#">9.2.1.29ac</a>		<a href="#">YES</a>	<a href="#">reject</a>
<a href="#">Serving E-DCH RL</a>	<a href="#">O</a>		<a href="#">9.2.1.53Ha</a>		<a href="#">YES</a>	<a href="#">reject</a>

Range Bound	Explanation
<i>maxnoofDCHs</i>	Maximum number of DCHs for a UE
<i>maxnoofRLs</i>	Maximum number of RLs for a UE
<i>maxnoofMACdFlows</i>	Maximum number of MAC-d Flows
<a href="#">EDPCHInfo</a>	<a href="#">This IE shall be present if E-DPCH Information IE is present.</a>

Condition	Explanation
SF/2	The IE shall be present if the <i>Transmission Gap Pattern Sequence Information</i> IE is included and the indicated Downlink Compressed Mode method for at least one of the included Transmission Gap Pattern Sequence is set to "SF/2".
HSDSCHRadio Link	The IE shall be present if <i>HS-PDSCH RL ID</i> IE is present.

## 9.1.47.2 TDD Message

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	reject
Transaction ID	M		9.2.1.62		–	
Node B Communication Context ID	M		9.2.1.48	The reserved value "All NBCC" shall not be used.	YES	reject
<b>UL CTrCH To Modify</b>		<i>0..&lt;maxno of CTrCHs&gt;</i>			EACH	notify
>CTrCH ID	M		9.2.3.3		–	
>TFCS	O		9.2.1.58		–	
>Puncture Limit	O		9.2.1.50		–	
>UL SIR Target	O		UL SIR 9.2.1.67A	Applicable to 1.28Mcps TDD only	YES	reject
<b>UL CTrCH To Delete</b>		<i>0..&lt;maxno of CTrCHs&gt;</i>			EACH	notify
>CTrCH ID	M		9.2.3.3		–	
<b>DL CTrCH To Modify</b>		<i>0..&lt;maxno of CTrCHs&gt;</i>			EACH	notify
>CTrCH ID	M		9.2.3.3		–	
>TFCS	O		9.2.1.58		–	
>Puncture Limit	O		9.2.1.50		–	
<b>&gt;DL DPCH To Modify LCR</b>		<i>0..1</i>		Applicable to 1.28Mcps TDD only	YES	ignore
<b>&gt;&gt;DL Timeslot Information LCR</b>		<i>0..&lt;maxno of DLtsLCR&gt;</i>			–	
>>>Time Slot LCR	M		9.2.3.24A		–	
>>>Maximum DL Power	O		DL Power 9.2.1.21	Maximum allowed power on DPCH	–	
>>>Minimum DL Power	O		DL Power 9.2.1.21	Minimum allowed power on DPCH	–	
>CTrCH Maximum DL Transmission Power	O		DL Power 9.2.1.21		YES	ignore
>CTrCH Minimum DL Transmission Power	O		DL Power 9.2.1.21		YES	ignore
<b>DL CTrCH To Delete</b>		<i>0..&lt;maxno of CTrCHs&gt;</i>			EACH	notify
>CTrCH ID	M		9.2.3.3		–	
DCHs To Modify	O		DCHs TDD To Modify 9.2.3.4D		YES	reject
DCHs To Add	O		DCH TDD Information 9.2.3.4C		YES	reject
<b>DCHs To Delete</b>		<i>0..&lt;maxno of DCHs&gt;</i>			GLOBAL	reject
>DCH ID	M		9.2.1.20		–	
<b>RL Information</b>		<i>0..&lt;maxno of RLS&gt;</i>		See note 1 below	YES	reject

>RL ID	M		9.2.1.53		–	
>Maximum Downlink Power	O		DL Power 9.2.1.21		–	
>Minimum Downlink Power	O		DL Power 9.2.1.21		–	
>RL Specific DCH Information	O		9.2.1.53G		YES	ignore
<b>&gt;UL Synchronisation Parameters LCR</b>		0..1		Mandatory for 1.28Mcps TDD. Not Applicable to 3.84Mcps TDD.	YES	ignore
>>Uplink Synchronisation Step Size	M		9.2.3.26H		–	
>>Uplink Synchronisation Frequency	M		9.2.3.26G		–	
Signalling Bearer Request Indicator	O		9.2.1.55A		YES	reject
HS-DSCH Information	O		HS-DSCH TDD Information 9.2.2.18D		YES	reject
HS-DSCH Information To Modify Unsynchronised	O		9.2.1.31HA		YES	reject
HS-DSCH MAC-d Flows To Add	O		HS-DSCH MAC-d Flows Information 9.2.1.31IA		YES	reject
HS-DSCH MAC-d Flows To Delete	O		9.2.1.31IB		YES	reject
HS-DSCH-RNTI	C- HSDSCH RadioLink		9.2.1.31J		YES	reject
HS-PDSCH RL ID	O		RL ID 9.2.1.53		YES	reject

Note 1: This information element is a simplified representation of the ASN.1. Repetition 1 and repetition 2 through *maxnoofRLs* are represented by separate ASN.1 structures with different criticality.

Range Bound	Explanation
<i>maxnoofCCTrCHs</i>	Maximum number of CCTrCHs for a UE
<i>maxnoofDLtsLCR</i>	Maximum number of Downlink time slots per Radio Link for 1.28Mcps TDD
<i>maxnoofDCHs</i>	Maximum number of DCHs for a UE
<i>maxnoofRLs</i>	Maximum number of RLs for one UE
<i>maxnoofMACdFlows</i>	Maximum number of MAC-d Flows

Condition	Explanation
HSDSCHRadio Link	The IE shall be present if <i>HS-PDSCH RL ID</i> IE is present.

## 9.1.48 RADIO LINK RECONFIGURATION RESPONSE

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	reject
Transaction ID	M		9.2.1.62		–	
CRNC Communication Context ID	M		9.2.1.18	The reserved value "All CRNCCC" shall not be used.	YES	ignore
<b>RL Information Response</b>		<i>0..&lt;maxno ofRLs&gt;</i>			EACH	ignore
>RL ID	M		9.2.1.53		–	
>DCH Information Response	O		9.2.1.20C		YES	ignore
>DL Power Balancing Updated Indicator	O		9.2.2.12D	FDD only	YES	ignore
<a href="#">&gt;E-DCH RL Set ID</a>	<a href="#">O</a>		<a href="#">9.2.2.39</a>		<a href="#">YES</a>	<a href="#">ignore</a>
<a href="#">&gt;E-DCH FDD DL Control Channel Information</a>	<a href="#">O</a>		<a href="#">9.2.2.13Dc</a>		<a href="#">YES</a>	<a href="#">ignore</a>
Criticality Diagnostics	O		9.2.1.17		YES	ignore
Target Communication Control Port ID	O		Communication Control Port ID 9.2.1.15		YES	ignore
HS-DSCH FDD Information Response	O		9.2.2.18E	FDD only	YES	ignore
HS-DSCH TDD Information Response	O		9.2.3.5G	TDD only	YES	ignore
<a href="#">&gt; E-DCH FDD Information Response</a>	<a href="#">O</a>		<a href="#">9.2.2.13Db</a>		<a href="#">YES</a>	<a href="#">ignore</a>

Range Bound	Explanation
<i>maxnoofRLs</i>	Maximum number of RLs for a UE

## 9.1.49 RADIO LINK DELETION REQUEST

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	reject
Transaction ID	M		9.2.1.62		–	
Node B Communication Context ID	M		9.2.1.48	The reserved value "All NBCC" shall not be used.	YES	reject
CRNC Communication Context ID	M		9.2.1.18		YES	reject
<b>RL Information</b>		<i>1..&lt;maxno ofRLs&gt;</i>			EACH	notify
>RL ID	M		9.2.1.53		–	

Range Bound	Explanation
<i>maxnoofRLs</i>	Maximum number of radio links for one UE

### 9.1.50 RADIO LINK DELETION RESPONSE

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	reject
Transaction ID	M		9.2.1.62		–	
CRNC Communication Context ID	M		9.2.1.18	The reserved value "All CRNCCC" shall not be used.	YES	ignore
Criticality Diagnostics	O		9.2.1.17		YES	ignore

### 9.1.51 DL POWER CONTROL REQUEST [FDD]

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	ignore
Transaction ID	M		9.2.1.62		–	
Node B Communication Context ID	M		9.2.1.48	The reserved value "All NBCC" shall not be used.	YES	ignore
Power Adjustment Type	M		9.2.2.27		YES	ignore
DL Reference Power	C-Common		DL power 9.2.1.21	Power on DPCH	YES	ignore
Inner Loop DL PC Status	O		9.2.2.18B		YES	ignore
<b>DL Reference Power Information</b>	C-Individual	<i>1..&lt;maxno ofRLs&gt;</i>			EACH	ignore
>RL ID	M		9.2.1.53		–	
>DL Reference Power	M		DL power 9.2.1.21	Power on DPCH	–	
Max Adjustment Step	C-Common OrIndividual		9.2.2.20		YES	ignore
Adjustment Period	C-Common OrIndividual		9.2.2.B		YES	ignore
Adjustment Ratio	C-Common OrIndividual		9.2.2.C		YES	ignore

Condition	Explanation
Common	The IE shall be present if the <i>Adjustment Type</i> IE is equal to "Common".
Individual	The IE shall be present if the <i>Adjustment Type</i> IE is equal to "Individual".
CommonOrIndividual	The IE shall be present if the <i>Adjustment Type</i> IE is equal to "Common" or "Individual".

Range Bound	Explanation
<i>maxnoofRLs</i>	Maximum number of Radio Links for a UE

## 9.1.52 DEDICATED MEASUREMENT INITIATION REQUEST

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	reject
Transaction ID	M		9.2.1.62		–	
Node B Communication Context ID	M		9.2.1.48	The reserved value "All NBCC" shall not be used when the Report characteristics type is set to "On Demand".	YES	reject
Measurement ID	M		9.2.1.42		YES	reject
CHOICE <i>Dedicated Measurement Object Type</i>	M				YES	reject
>RL					–	
>>RL Information		1..<maxno ofRLs>			EACH	reject
>>>RL ID	M		9.2.1.53		–	
>>>DPCH ID	O		9.2.3.5	TDD only	–	
>>>PUSCH Information		0..<maxno ofPUSCHs>		TDD only	GLOBAL	reject
>>>>PUSCH ID	M		9.2.3.12		–	
>>>>HS-SICH Information		0..<maxno ofHSSICHs>		TDD only	GLOBAL	reject
>>>>HS-SICH ID	M		9.2.3.5Gb		–	
>RLS				FDD only	–	
>>RL Set Information		1..<maxno ofRLSets>			–	
>>>RL Set ID	M		9.2.2.39		–	
>ALL RL			NULL		–	
>ALL RLS			NULL	FDD only	–	
Dedicated Measurement Type	M		9.2.1.23		YES	reject
Measurement Filter Coefficient	O		9.2.1.41		YES	reject
Report Characteristics	M		9.2.1.51		YES	reject
CFN Reporting Indicator	M		FN Reporting Indicator 9.2.1.29B		YES	reject
CFN	O		9.2.1.7		YES	reject
Number Of Reported Cell Portions	C-BestCellPortionsMeasurement		9.2.2.23D	FDD only	YES	reject
Measurement Recovery Behavior	O		9.2.1.43A		YES	ignore



Condition	Explanation
BestCellPortionsMeas	The IE shall be present if the <i>Dedicated Measurement Type</i> IE is set to "Best Cell Portions".

Range Bound	Explanation
<i>maxnoofRLs</i>	Maximum number of individual RLs a measurement can be started on
<i>maxnoofPUSCHs</i>	Maximum number of PUSCHs per RL a measurement can be started on
<i>maxnoofRLSets</i>	Maximum number of individual RL Sets a measurement can be started on
<i>maxnoofHSSICHs</i>	Maximum number of HSSICHs per RL a measurement can be started on

## 9.1.53 DEDICATED MEASUREMENT INITIATION RESPONSE

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	reject
Transaction ID	M		9.2.1.62		–	
CRNC Communication Context ID	M		9.2.1.18		YES	ignore
Measurement ID	M		9.2.1.42		YES	ignore
CHOICE <i>Dedicated Measurement Object Type</i>	O			Dedicated Measurement Object Type the measurement was initiated with	YES	ignore
>RL or ALL RL				See Note 1	–	
>>RL Information		1..<maxno ofRLs>			EACH	ignore
>>>RL ID	M		9.2.1.53		–	
>>>DPCH ID	O		9.2.3.5	TDD only	–	
>>>Dedicated Measurement Value	M		9.2.1.24		–	
>>>CFN	O		9.2.1.7	Dedicated Measurement Time Reference	–	
>>>PUSCH Information		0..<maxno ofPUSCHs >		TDD only	GLOBAL	reject
>>>>PUSCH ID	M		9.2.3.12		–	
>>>HS-SICH ID	O		9.2.3.5Gb	TDD only	YES	reject
>RLS or ALL RLS				FDD only See Note 2	–	
>>RL Set Information		1..<maxno ofRLSets>			EACH	ignore
>>>RL Set ID	M		9.2.2.39		–	
>>>Dedicated Measurement Value	M		9.2.1.24		–	
>>>CFN	O		9.2.1.7	Dedicated Measurement Time Reference	–	
Criticality Diagnostics	O		9.2.1.17		YES	ignore
Measurement Recovery Support Indicator	O		9.2.1.43C		YES	ignore

Range Bound	Explanation
<i>maxnoofRLs</i>	Maximum number of individual RLs the measurement can be started on
<i>maxnoofPUSCHs</i>	Maximum number of PUSCHs per RL a measurement can be started on
<i>maxnoofRLSets</i>	Maximum number of individual RL Sets a measurement can be started on

Note 1: This is a simplified representation of the ASN.1: there are two different choice tags "RL" and "ALL RL" in the ASN.1, each having exactly the same structure.

Note 2: This is a simplified representation of the ASN.1: there are two different choice tags "RLS" and "ALL RLS" in the ASN.1, each having exactly the same structure.

## 9.1.54 DEDICATED MEASUREMENT INITIATION FAILURE

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	reject
Transaction ID	M		9.2.1.62		–	
CRNC Communication Context ID	M		9.2.1.18		YES	ignore
Measurement ID	M		9.2.1.42		YES	ignore
Cause	M		9.2.1.6		YES	ignore
Criticality Diagnostics	O		9.2.1.17		YES	ignore

## 9.1.55 DEDICATED MEASUREMENT REPORT

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	ignore
Transaction ID	M		9.2.1.62		–	
CRNC Communication Context ID	M		9.2.1.18	The reserved value "All CRNCCC" shall not be used.	YES	ignore
Measurement ID	M		9.2.1.42		YES	ignore
CHOICE <i>Dedicated Measurement Object Type</i>	M			Dedicated Measurement Object Type the measurement was initiated with	YES	ignore
<i>&gt;RL or ALL RL</i>				See Note 1	–	
<b>&gt;&gt;RL Information</b>		<i>1..&lt;maxno ofRLs&gt;</i>			EACH	ignore
>>>RL ID	M		9.2.1.53		–	
>>>DPCH ID	O		9.2.3.5	TDD only	–	
>>>Dedicated Measurement Value Information	M		9.2.1.24A		–	
<b>&gt;&gt;&gt;PUSCH Information</b>		<i>0..&lt;maxno ofPUSCHs &gt;</i>		TDD only	GLOBAL	reject
>>>>PUSCH ID	M		9.2.3.12		–	
>>>HS-SICH ID	O		9.2.3.5Gb	TDD only	YES	reject
<i>&gt;RLS or ALL RLS</i>				FDD only See Note 2	–	
<b>&gt;&gt;RL Set Information</b>		<i>1..&lt;maxno ofRLSets&gt;</i>			EACH	ignore
>>>RL Set ID	M		9.2.2.39		–	
>>>Dedicated Measurement Value Information	M		9.2.1.24A		–	
Measurement Recovery Reporting Indicator	O		9.2.1.43B		YES	ignore

Range Bound	Explanation
<i>maxnoofRLs</i>	Maximum number of individual RLS the measurement can be started on
<i>maxnoofPUSCHs</i>	Maximum number of PUSCHs per RL a measurement can be started on
<i>maxnoofRLSets</i>	Maximum number of individual RL Sets a measurement can be started on

Note 1: This is a simplified representation of the ASN.1: there are two different choice tags "RL" and "ALL RL" in the ASN.1, each having exactly the same structure.

Note 2: This is a simplified representation of the ASN.1: there are two different choice tags "RLS" and "ALL RLS" in the ASN.1, each having exactly the same structure.

## 9.1.56 DEDICATED MEASUREMENT TERMINATION REQUEST

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	ignore
Transaction ID	M		9.2.1.62		–	
Node B Communication Context ID	M		9.2.1.48	The reserved value "All NBCC" shall be used if this value was used when initiating the measurement. Otherwise, the reserved value "All NBCC" shall not be used.	YES	ignore
Measurement ID	M		9.2.1.42		YES	ignore

## 9.1.57 DEDICATED MEASUREMENT FAILURE INDICATION

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	ignore
Transaction ID	M		9.2.1.62		–	
CRNC Communication Context ID	M		9.2.1.18	The reserved value "All CRNCCC" shall be used if the Node B Communication Context ID was set to "All NBCC" when initiating the measurement. Otherwise, the reserved value "All CRNCCC" shall not be used.	YES	ignore
Measurement ID	M		9.2.1.42		YES	ignore
Cause	M		9.2.1.6		YES	ignore

## 9.1.58 RADIO LINK FAILURE INDICATION

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	ignore
Transaction ID	M		9.2.1.62		–	
CRNC Communication Context ID	M		9.2.1.18	The reserved value "All CRNCCC" shall not be used.	YES	ignore
CHOICE <i>Reporting Object</i>	M			Object for which the Failure shall be reported.	YES	ignore
>RL					–	
>>RL Information		1..<maxno ofRLs>			EACH	ignore
>>>RL ID	M		9.2.1.53		–	
>>>Cause	M		9.2.1.6		–	
>RL Set				FDD only	–	
>>RL Set Information		1..<maxno ofRL Sets>			EACH	ignore
>>>RL Set ID	M		9.2.2.39		–	
>>>Cause	M		9.2.1.6		–	
>CCTrCH				TDD only	–	
>>RL ID	M		9.2.1.53		–	
>>CCTrCH List		1..<maxno ofCCTrCH s>			EACH	ignore
>>>CCTrCH ID	M		9.2.3.3		–	
>>>Cause	M		9.2.1.6		–	

Range Bound	Explanation
<i>maxnoofRLs</i>	Maximum number of RLs for one UE
<i>maxnoofRLSets</i>	Maximum number of RL Sets for one UE
<i>maxnoofCCTrCHs</i>	Maximum number of CCTrCHs for a UE

## 9.1.59 RADIO LINK RESTORE INDICATION

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	ignore
Transaction ID	M		9.2.1.62		–	
CRNC Communication Context ID	M		9.2.1.18	The reserved value "All CRNCCC" shall not be used.	YES	ignore
CHOICE <i>Reporting Object</i>	M			Object for which the Restoration shall be reported.	YES	ignore
>RL				TDD only	–	
>>Radio Link Information		1..<maxno ofRLs>			EACH	ignore
>>>RL ID	M		9.2.1.53		–	
>RL Set				FDD only	–	
>>RL Set Information		1..<maxno ofRLSets>			EACH	ignore
>>>RL Set ID	M		9.2.2.39		–	
>CCTrCH				TDD only	–	
>>RL ID	M		9.2.1.53		–	
>>CCTrCH List		1..<maxno ofCCTrCHs>			EACH	ignore
>>>CCTrCH ID	M		CCTrCH ID 9.2.3.3		–	

Range Bound	Explanation
<i>maxnoofRLs</i>	Maximum number of RLs for one UE
<i>maxnoofRLSets</i>	Maximum number of RL Sets for one UE
<i>maxnoofCCTrCHs</i>	Maximum number of CCTrCHs for a UE

## 9.1.60 COMPRESSED MODE COMMAND [FDD]

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	ignore
Transaction ID	M		9.2.1.62		–	
Node B Communication Context ID	M		9.2.1.48	The reserved value "All NBCC" shall not be used.	YES	ignore
Active Pattern Sequence Information	M		9.2.2.A		YES	ignore

## 9.1.61 ERROR INDICATION

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	ignore
Transaction ID	M		9.2.1.62		–	
CRNC Communication Context ID	O		9.2.1.18	The reserved value "All CRNCCC" shall not be used.	YES	ignore
Node B Communication Context ID	O		9.2.1.48	The reserved value "All NBCC" shall not be used.	YES	ignore
Cause	O		9.2.1.6		YES	ignore
Criticality Diagnostics	O		9.2.1.17		YES	ignore

## 9.1.62 PHYSICAL SHARED CHANNEL RECONFIGURATION REQUEST

### 9.1.62.1 FDD Message

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	reject
Transaction ID	M		9.2.1.62		–	
C-ID	M		9.2.1.9		YES	reject
Configuration Generation ID	M		9.2.1.16		YES	reject
SFN	O		9.2.1.53A		YES	reject
HS-PDSCH And HS-SCCH Total Power	O		Maximum Transmission Power 9.2.1.40	Maximum transmission power to be allowed for HS-PDSCH and HS-SCCH codes	YES	reject
HS-PDSCH And HS-SCCH Scrambling Code	O		DL Scrambling Code 9.2.2.13	Scrambling code on which HS-PDSCH and HS-SCCH is transmitted. 0= Primary scrambling code of the cell 1...15 = Secondary scrambling code	YES	reject
HS-PDSCH FDD Code Information	O		9.2.2.18F		YES	reject
HS-SCCH FDD Code Information	O		9.2.2.18G		YES	reject



<a href="#">E-AGCH And E-RGCH/E-HICH FDD Scrambling Code</a>	<a href="#">O</a>		<a href="#">DL Scrambling Code 9.2.2.13</a>	<a href="#">Scrambling code on which E-AGCH, E-RGCH and E-HICH are transmitted. 0= Primary scrambling code of the cell 1..15 = Secondary scrambling code</a>	<a href="#">YES</a>	<a href="#">reject</a>
<a href="#">E-AGCH Code FDD Information</a>	<a href="#">O</a>		<a href="#">9.2.2.13lb</a>		<a href="#">YES</a>	<a href="#">reject</a>
<a href="#">E-RGCH/E-HICH Code FDD Information</a>	<a href="#">O</a>		<a href="#">9.2.2.13la</a>		<a href="#">YES</a>	<a href="#">reject</a>

## 9.1.62.2 TDD Message

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	reject
Transaction ID	M		9.2.1.62		–	
C-ID	M		9.2.1.9		YES	reject
SFN	O		9.2.1.53A		YES	reject
<b>PDSCH Sets To Add</b>		<i>0..&lt;maxno ofPDSCH Sets&gt;</i>			GLOBAL	reject
>PDSCH Set ID	M		9.2.3.11		–	
<b>&gt;PDSCH To Add Information</b>		<i>0..1</i>		Mandatory for 3.84Mcps TDD. Not Applicable to 1.28Mcps TDD.	YES	reject
>>Repetition Period	M		9.2.3.16		–	
>>Repetition Length	M		9.2.3.15		–	
>>TDD Physical Channel Offset	M		9.2.3.20		–	
<b>&gt;&gt;DL Timeslot Information</b>		<i>1..&lt;maxno ofDLts&gt;</i>			–	
>>>Time Slot	M		9.2.3.23		–	
>>>Midamble Shift And Burst Type	M		9.2.3.7		–	
>>>TFCI Presence	M		9.2.1.57		–	
<b>&gt;&gt;&gt;DL Code Information</b>		<i>1..&lt;maxno ofPDSCHs &gt;</i>			–	
>>>>PDSCH ID	M		9.2.3.10		–	
>>>>TDD Channelisation Code	M		9.2.3.19		–	
<b>&gt;PDSCH To Add Information LCR</b>		<i>0..1</i>		Mandatory for 1.28Mcps TDD. Not Applicable to 3.84Mcps TDD.	YES	reject
>>Repetition Period	M		9.2.3.16		–	
>>Repetition Length	M		9.2.3.15		–	

>>TDD Physical Channel Offset	M		9.2.3.20		–	
<b>&gt;&gt;DL Timeslot Information LCR</b>		<i>1..&lt;maxno ofDLtsLCR&gt;</i>			–	
>>>Time Slot LCR	M		9.2.3.24A		–	
>>>Midamble Shift LCR	M		9.2.3.7A		–	
>>>TFCI Presence	M		9.2.1.57		–	
<b>&gt;&gt;&gt;DL Code Information LCR</b>		<i>1..&lt;maxno ofPDSCHs&gt;</i>			–	
>>>>PDSCH ID	M		9.2.3.10		–	
>>>>TDD Channelisation Code LCR	M		9.2.3.19a		–	
>>TSTD Indicator	O		9.2.1.64		YES	reject
<b>PDSCH Sets To Modify</b>		<i>0..&lt;maxno of PDSCHsets&gt;</i>			GLOBAL	reject
>PDSCH Set ID	M		9.2.3.11		–	
>CHOICE <i>HCR or LCR</i>	M			See note 1 below	–	
>>3.84Mcps TDD					–	
<b>&gt;&gt;&gt;PDSCH To Modify Information</b>		<i>1</i>			YES	reject
>>>>Repetition Period	O		9.2.3.16		–	
>>>>Repetition Length	O		9.2.3.15		–	
>>>>TDD Physical Channel Offset	O		9.2.3.20		–	
<b>&gt;&gt;&gt;&gt;DL Timeslot Information</b>		<i>0..&lt;maxno ofDLts&gt;</i>			–	
>>>>>Time Slot	M		9.2.3.23		–	
>>>>>Midamble Shift And Burst Type	O		9.2.3.7		–	
>>>>>TFCI Presence	O		9.2.1.57		–	
<b>&gt;&gt;&gt;&gt;&gt;DL Code Information</b>		<i>0..&lt;maxno ofPDSCHs&gt;</i>			–	
>>>>>>PDSCH ID	M		9.2.3.10		–	
>>>>>>TDD Channelisation Code	M		9.2.3.19		–	
>>1.28Mcps TDD					–	
<b>&gt;&gt;&gt;PDSCH To Modify Information LCR</b>		<i>1</i>			YES	reject
>>>>Repetition Period	O		9.2.3.16		–	
>>>>Repetition Length	O		9.2.3.15		–	
>>>>TDD Physical Channel Offset	O		9.2.3.20		–	

<b>&gt;&gt;&gt;&gt;DL Timeslot Information LCR</b>		<i>0..&lt;maxno ofDLtsLCR&gt;</i>			-	
>>>>Time Slot LCR	M		9.2.3.24A		-	
>>>>Midamble Shift LCR	O		9.2.3.7A		-	
>>>>TFCI Presence	O		9.2.1.57		-	
<b>&gt;&gt;&gt;&gt;DL Code Information LCR</b>		<i>0..&lt;maxno ofPDSCHs&gt;</i>			-	
>>>>>PDSCH ID	M		9.2.3.10		-	
>>>>>TDD Channelisation Code LCR	M		9.2.3.19a		-	
<b>PDSCH Sets To Delete</b>		<i>0..&lt;maxno of PDSCHSets&gt;</i>			GLOBAL	reject
>PDSCH Set ID	M		9.2.3.11		-	
<b>PUSCH Sets To Add</b>		<i>0..&lt;maxno of PUSCHSets&gt;</i>			GLOBAL	reject
>PUSCH Set ID	M		9.2.3.13		-	
<b>&gt;PUSCH To Add Information</b>		<i>0..1</i>		Mandatory for 3.84Mcps TDD. Not Applicable to 1.28Mcps TDD.	YES	reject
>>Repetition Period	M		9.2.3.16		-	
>>Repetition Length	M		9.2.3.15		-	
>>TDD Physical Channel Offset	M		9.2.3.20		-	
<b>&gt;&gt;UL Timeslot Information</b>		<i>1..&lt;maxno ofULts&gt;</i>			-	
>>>Time Slot	M		9.2.3.23		-	
>>>Midamble Shift And Burst Type	M		9.2.3.7		-	
>>>TFCI Presence	M		9.2.1.57		-	
<b>&gt;&gt;&gt;UL Code Information</b>		<i>1..&lt;maxno ofPUSCHs&gt;</i>			-	
>>>>PUSCH ID	M		9.2.3.12		-	
>>>>TDD Channelisation Code	M		9.2.3.19		-	
<b>&gt;PUSCH To Add Information LCR</b>		<i>0..1</i>		Mandatory for 1.28Mcps TDD. Not Applicable to 3.84Mcps TDD.	YES	reject
>>Repetition Period	M		9.2.3.16		-	
>>Repetition Length	M		9.2.3.15		-	
>>TDD Physical Channel Offset	M		9.2.3.20		-	
<b>&gt;&gt;UL Timeslot Information LCR</b>		<i>1..&lt;maxno ofULtsLCR&gt;</i>			-	
>>>Time Slot LCR	M		9.2.3.24A		-	

>>>Midamble Shift LCR	M		9.2.3.7A		-	
>>>TFCI Presence	M		9.2.1.57		-	
<b>&gt;&gt;&gt;UL Code Information LCR</b>		1..<maxno ofPUSCHs LCR>			-	
>>>>PUSCH ID	M		9.2.3.12		-	
>>>>TDD Channelisation Code LCR	M		9.2.3.19a		-	
<b>PUSCH Sets To Modify</b>		0..<maxno of PUSCHSets>			GLOBAL	reject
>PUSCH Set ID	M		9.2.3.13		-	
>CHOICE HCR or LCR	M			See note 1 below	-	
>>3.84Mcps TDD					-	
<b>&gt;&gt;&gt;PUSCH To Modify Information</b>		1			YES	reject
>>>>Repetition Period	O		9.2.3.16		-	
>>>>Repetition Length	O		9.2.3.15		-	
>>>>TDD Physical Channel Offset	O		9.2.3.20		-	
<b>&gt;&gt;&gt;&gt;UL Timeslot Information</b>		0..<maxno ofULts>			-	
>>>>>Time Slot	M		9.2.3.23		-	
>>>>>Midamble Shift And Burst Type	O		9.2.3.7		-	
>>>>>TFCI Presence	O		9.2.1.57		-	
<b>&gt;&gt;&gt;&gt;&gt;UL Code Information</b>		0..<maxno ofPUSCHs >			-	
>>>>>>PUSCH ID	M		9.2.3.12		-	
>>>>>>TDD Channelisation Code	M		9.2.3.19		-	
>>1.28Mcps TDD					-	
<b>&gt;&gt;&gt;PUSCH To Modify Information LCR</b>		1			YES	reject
>>>>Repetition Period	O		9.2.3.16		-	
>>>>Repetition Length	O		9.2.3.15		-	
>>>>TDD Physical Channel Offset	O		9.2.3.20		-	
<b>&gt;&gt;&gt;&gt;UL Timeslot Information LCR</b>		0..<maxno ofULtsLCR >			-	
>>>>>Time Slot LCR	M		9.2.3.24A		-	
>>>>>Midamble Shift LCR	O		9.2.3.7A		-	
>>>>>TFCI Presence	O		9.2.1.57		-	

<b>&gt;&gt;&gt;&gt;&gt;UL Code Information LCR</b>		<i>0..&lt;maxno ofPUSCHs LCR&gt;</i>			–	
>>>>>PUSCH ID	M		9.2.3.12		–	
>>>>>TDD Channelisation Code LCR	M		9.2.3.19a		–	
<b>PUSCH Sets To Delete</b>		<i>0..&lt;maxno ofPUSCH Sets&gt;</i>			GLOBAL	reject
>PUSCH Set ID	M		9.2.3.13		–	
<b>HS-PDSCH TDD Information</b>		<i>0..1</i>			GLOBAL	reject
<b>&gt;DL Timeslot and Code Information</b>		<i>0..&lt;maxno ofDLts&gt;</i>		Mandatory for 3.84Mcps TDD. Not Applicable to 1.28Mcps TDD.	–	
>>Time Slot	M		9.2.3.23		–	
>>Midamble Shift And Burst Type	M		9.2.3.7		–	
<b>&gt;&gt;Codes</b>		<i>1..&lt;maxno ofHSPDS CHs&gt;</i>			–	
>>>TDD Channelisation Code	M		9.2.3.19		–	
>>HS-PDSCH and HS-SCCH Total Power	O		Maximum Transmission Power 9.2.1.40	Maximum transmission power to be allowed for HS-PDSCH and HS-SCCH codes in the timeslot	YES	reject
<b>&gt;DL Timeslot and Code Information LCR</b>		<i>0..&lt;maxno ofDLtsLCR &gt;</i>		Mandatory for 1.28Mcps TDD. Not Applicable to 3.84Mcps TDD.	–	
>>Time Slot LCR	M		9.2.3.24a		–	
>>Midamble Shift LCR	M		9.2.3.7A		–	
<b>&gt;&gt;Codes LCR</b>		<i>1..&lt;maxno ofHSPDS CHs&gt;</i>			–	
>>>TDD Channelisation Code	M		9.2.3.19		–	
>>HS-PDSCH and HS-SCCH Total Power	O		Maximum Transmission Power 9.2.1.40	Maximum transmission power to be allowed for HS-PDSCH and HS-SCCH codes in the timeslot	YES	reject
<b>Add to HS-SCCH Resource Pool</b>		<i>0..1</i>			GLOBAL	reject
<b>&gt;HS-SCCH Information</b>		<i>0..&lt;maxno ofHSSCC Hs&gt;</i>		Applicable to 3.84Mcps TDD only	–	
>>HS-SCCH ID	M		9.2.3.5Ga		–	
>>Time Slot	M		9.2.3.23		–	

>>Midamble Shift And Burst Type	M		9.2.3.7		–	
>>TDD Channelisation Code	M		9.2.3.19		–	
>>Maximum HS-SCCH Power	M		DL Power 9.2.1.21		–	
<b>&gt;&gt;HS-SICH Information</b>		1			–	
>>>HS-SICH ID	M		9.2.3.5Gb		–	
>>>Time Slot	M		9.2.3.23		–	
>>>Midamble Shift And Burst Type	M		9.2.3.7		–	
>>>TDD Channelisation Code	M		9.2.3.19		–	
<b>&gt;HS-SCCH Information LCR</b>		0..<maxno ofHSSCC Hs>		Applicable to 1.28Mcps TDD only	GLOBAL	reject
>>HS-SCCH ID	M		9.2.3.5Ga		–	
>>Time Slot LCR	M		9.2.3.24a		–	
>>Midamble Shift LCR	M		9.2.3.7A		–	
>>First TDD Channelisation Code	M		TDD Channelisation Code 9.2.3.19		–	
>>Second TDD Channelisation Code	M		TDD Channelisation Code 9.2.3.19		–	
>>Maximum HS-SCCH Power	M		DL Power 9.2.1.21		–	
<b>&gt;&gt;HS-SICH Information LCR</b>		1			–	
>>>HS-SICH ID	M		9.2.3.5Gb		–	
>>>Time Slot LCR	M		9.2.3.24a		–	
>>>Midamble Shift LCR	M		9.2.3.7A		–	
>>>TDD Channelisation Code	M		9.2.3.19		–	
<b>Modify HS-SCCH Resource Pool</b>		0..1			GLOBAL	reject
<b>&gt;HS-SCCH Information</b>		0..<maxno ofHSSCC Hs>		Applicable to 3.84Mcps TDD only	–	
>>HS-SCCH ID	M		9.2.3.5Ga		–	
>>Time Slot	O		9.2.3.23		–	
>>Midamble Shift And Burst Type	O		9.2.3.7		–	
>>TDD Channelisation Code	O		9.2.3.19		–	
>>Maximum HS-SCCH Power	O		DL Power 9.2.1.21		–	
<b>&gt;&gt;HS-SICH Information</b>		0..1			–	
>>>HS-SICH ID	M		9.2.3.5Gb		–	
>>>Time Slot	O		9.2.3.23		–	
>>>Midamble Shift And Burst Type	O		9.2.3.7		–	
>>>TDD Channelisation Code	O		9.2.3.19		–	
<b>&gt;HS-SCCH Information LCR</b>		0..<maxno ofHSSCC Hs>		Applicable to 1.28Mcps TDD only	GLOBAL	reject

>>HS-SCCH ID	M		9.2.3.5Ga		–	
>>Time Slot LCR	O		9.2.3.24a		–	
>>Midamble Shift LCR	O		9.2.3.7A		–	
>>First TDD Channelisation Code	O		TDD Channelisation Code 9.2.3.19		–	
>>Second TDD Channelisation Code	O		TDD Channelisation Code 9.2.3.19			
>>Maximum HS-SCCH Power	O		DL Power 9.2.1.21		–	
<b>&gt;&gt;HS-SICH Information LCR</b>		0..1			–	
>>>HS-SICH ID	M		9.2.3.5Gb		–	
>>>Time Slot LCR	O		9.2.3.24a		–	
>>>Midamble Shift LCR	O		9.2.3.7A		–	
>>>TDD Channelisation Code	O		9.2.3.19		–	
<b>Delete from HS-SCCH Resource Pool</b>		0..<maxno of HSSCCHs >			GLOBAL	reject
>HS-SCCH ID	M		9.2.3.5Ga		–	
Configuration Generation ID	O		9.2.1.16		YES	reject

Note 1: This information element is a simplified representation of the ASN.1. The choice is in reality performed through the use of ProtocolIE-Single-Container within the ASN.1.

Range Bound	Explanation
<i>maxnoofPDSCHSets</i>	Maximum number of PDSCH Sets in a cell.
<i>maxnoofPDSCHs</i>	Maximum number of PDSCH in a cell.
<i>maxnoofPUSCHSets</i>	Maximum number of PUSCH Sets in a cell.
<i>maxnoofPUSCHs</i>	Maximum number of PUSCH in a cell.
<i>maxnoofDLts</i>	Maximum number of Downlink time slots in a cell for 3.84Mcps TDD.
<i>maxnoofDLtsLCR</i>	Maximum number of Downlink time slots in a cell for 1.28Mcps TDD.
<i>maxnoofULts</i>	Maximum number of Uplink time slots in a cell for 3.84Mcps TDD.
<i>maxnoofULtsLCR</i>	Maximum number of Uplink time slots in a cell for 1.28Mcps TDD
<i>maxnoofHSSCCHs</i>	Maximum number of HS-SCCHs in a Cell
<i>maxnoofHSPDSCHs</i>	Maximum number of HS-PDSCHs in one time slot of a Cell

### 9.1.63 PHYSICAL SHARED CHANNEL RECONFIGURATION RESPONSE

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	reject
Transaction ID	M		9.2.1.62		–	
Criticality Diagnostics	O		9.2.1.17		YES	ignore

## 9.1.64 PHYSICAL SHARED CHANNEL RECONFIGURATION FAILURE

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	reject
Transaction ID	M		9.2.1.62		–	
CHOICE <i>Cause Level</i>	M				YES	ignore
> <i>General</i>					–	
>> <i>Cause</i>	M		9.2.1.6		–	
> <i>Set Specific</i>				TDD Only	–	
>> <b>Unsuccessful DL Shared Channel Set</b>		0..< <i>maxno ofPDSCH Sets</i> >			EACH	ignore
>>>PDSCH Set ID	M		9.2.3.13		–	
>>> <i>Cause</i>	M		9.2.1.6		–	
>> <b>Unsuccessful UL Shared Channel Set</b>		0..< <i>maxno ofPUSCH Sets</i> >			EACH	ignore
>>>PUSCH Set ID	M		9.2.3.13		–	
>>> <i>Cause</i>	M		9.2.1.6		–	
Criticality Diagnostics	O		9.2.1.17		YES	ignore

Range Bound	Explanation
<i>maxnoofPDSCHSets</i>	Maximum number of PDSCH Sets in a cell
<i>maxnoofPUSCHSets</i>	Maximum number of PUSCH Sets in a cell

## 9.1.65 RESET REQUEST

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	reject
Transaction ID	M		9.2.1.62		–	



CHOICE <i>Reset Indicator</i>	M				YES	ignore
> <i>Communication Context</i>					–	
>> <b>Communication Context Information</b>		1..<maxCommunicationContext>			EACH	reject
>>>CHOICE <i>Communication Context Type</i>	M				–	
>>>>CRNC <i>Communication Context</i>					–	
>>>>>CRNC <i>Communication Context ID</i>	M		9.2.1.18		–	
>>>>Node B <i>Communication Context</i>					–	
>>>>>Node B <i>Communication Context ID</i>	M		9.2.1.48		–	
> <i>Communication Control Port</i>					–	
>> <b>Communication Control Port Information</b>		1..<maxCCPinNodeB>			EACH	reject
>>>Communication <i>Control Port ID</i>	M		9.2.1.15		–	
>Node B			NULL		–	

Range Bound	Explanation
<i>maxCommunicationContext</i>	Maximum number of Communication Contexts that can exist in the Node B
<i>maxCCPinNodeB</i>	Maximum number of Communication Control Ports that can exist in the Node B

## 9.1.66 RESET RESPONSE

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	reject
Transaction ID	M		9.2.1.62		–	
Criticality Diagnostics	O		9.2.1.17		YES	ignore

## 9.1.67 DL POWER TIMESLOT CONTROL REQUEST [TDD]

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	ignore
Transaction ID	M		9.2.1.62		–	
Node B Communication Context ID	M		9.2.1.48	The reserved value "All NBCC" shall not be used.	YES	ignore
DL Time Slot ISCP Info	O		9.2.3.4F	Mandatory for 3.84Mcps TDD. Not Applicable to 1.28Mcps TDD.	YES	ignore
DL Time Slot ISCP Info LCR	O		9.2.3.4P	Mandatory for 1.28Mcps TDD. Not Applicable to 3.84Mcps TDD.	YES	ignore
Primary CCPCH RSCP	O		9.2.3.11A		YES	ignore
Primary CCPCH RSCP Delta	O		9.2.3.11B		YES	ignore

## 9.1.68 RADIO LINK PREEMPTION REQUIRED INDICATION

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	ignore
Transaction ID	M		9.2.1.62		–	
CRNC Communication Context ID	M		9.2.1.18		YES	ignore
<b>RL Information</b>		<i>0..&lt;maxno ofRLs&gt;</i>			EACH	ignore
>RL ID	M		9.2.1.53		–	

Range Bound	Explanation
<i>maxnoofRLs</i>	Maximum number of radio links for one UE

## 9.1.69 INFORMATION EXCHANGE INITIATION REQUEST

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	reject
Transaction ID	M		9.2.1.62		–	
Information Exchange ID	M		9.2.1.36C		YES	reject
CHOICE <i>Information Exchange Object Type</i>	M				YES	reject
>Cell					–	
>>C-ID	M		9.2.1.9		–	
Information Type	M		9.2.1.36D		YES	reject
Information Report Characteristics	M		9.2.1.36B		YES	reject

## 9.1.70 INFORMATION EXCHANGE INITIATION RESPONSE

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	reject
Transaction ID	M		9.2.1.62		–	
Information Exchange ID	M		9.2.1.36C		YES	ignore
CHOICE <i>Information Exchange Object Type</i>	O				YES	ignore
>Cell					–	
>>Requested Data Value	M		9.2.1.51A		–	
Criticality Diagnostics	O		9.2.1.17		YES	ignore

## 9.1.71 INFORMATION EXCHANGE INITIATION FAILURE

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	reject
Transaction ID	M		9.2.1.62		–	
Information Exchange ID	M		9.2.1.36C		YES	ignore
Cause	M		9.2.1.6		YES	ignore
Criticality Diagnostics	O		9.2.1.17		YES	ignore

## 9.1.72 INFORMATION REPORT

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	ignore
Transaction ID	M		9.2.1.62		–	
Information Exchange ID	M		9.2.1.36C		YES	ignore
CHOICE <i>Information Exchange Object Type</i>	M				YES	ignore
>Cell					–	
>>Requested Data Value Information	M		9.2.1.51B		–	

## 9.1.73 INFORMATION EXCHANGE TERMINATION REQUEST

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	ignore
Transaction ID	M		9.2.1.62		–	
Information Exchange ID	M		9.2.1.36C		YES	ignore

## 9.1.74 INFORMATION EXCHANGE FAILURE INDICATION

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	ignore
Transaction ID	M		9.2.1.62		–	
Information Exchange ID	M		9.2.1.36C		YES	ignore
Cause	M		9.2.1.6		YES	ignore

## 9.1.75 CELL SYNCHRONISATION INITIATION REQUEST [TDD]

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	reject
Transaction ID	M		9.2.1.62		–	
C-ID	M		9.2.1.9		YES	reject
Cell Sync Burst Repetition Period	M		9.2.3.4J		YES	reject
<b>Time Slot Information</b>		0..15		Mandatory for 3.84Mcps TDD. Not Applicable to 1.28Mcps TDD.	GLOBAL	reject
>Time Slot	M		9.2.3.23		–	
<b>Cell Sync Burst Transmission Initiation Information</b>		0..1		Applicable to 3.84Mcps TDD only	GLOBAL	reject
>CSB Transmission ID	M		9.2.3.4N		–	
>SFN	M		9.2.1.53A		–	
>Cell Sync Burst Code	M		9.2.3.4G		–	
>Cell Sync Burst Code Shift	M		9.2.3.4H		–	
>Initial DL Transmission Power	M		DL Power 9.2.1.21		–	
<b>Cell Sync Burst Measurement Initiation Information</b>		0..1		Applicable to 3.84Mcps TDD only	GLOBAL	reject
>CSB Measurement ID	M		9.2.3.4I		–	
>Cell Sync Burst Code	M		9.2.3.4G		–	
>Cell Sync Burst Code Shift	M		9.2.3.4H		–	
>Synchronisation Report Type	M		9.2.3.18E		–	
>SFN	O		9.2.1.53A		–	
>Synchronisation Report Characteristics	M		9.2.3.18D		–	
<b>SYNC_DL Code Transmission Initiation Information LCR</b>		0..1		Applicable to 1.28Mcps TDD only	GLOBAL	reject
>CSB Transmission ID	M		9.2.3.4N		–	
>SFN	M		9.2.1.53A		–	
>UARFCN	M		9.2.1.65		–	
>SYNC_DL Code ID	M		9.2.3.18B		–	
>DwPCH Power	M		9.2.3.5B		–	
<b>SYNC_DL Code Measurement Initiation Information LCR</b>		0..1		Applicable to 1.28Mcps TDD only	GLOBAL	reject
>CSB Measurement ID	M		9.2.3.4I		–	

>SFN	O		9.2.1.53A		–	
>UARFCN	M		9.2.1.65		–	
>SYNC_DL Code ID	M		9.2.3.18B		–	
>Synchronisation Report Type	M		9.2.3.18E		–	
>Synchronisation Report Characteristics	M		9.2.3.18D		–	

### 9.1.76 CELL SYNCHRONISATION INITIATION RESPONSE [TDD]

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	reject
Transaction ID	M		9.2.1.62		–	
Criticality Diagnostics	O		9.2.1.17		YES	ignore

### 9.1.77 CELL SYNCHRONISATION INITIATION FAILURE [TDD]

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	reject
Transaction ID	M		9.2.1.62		–	
Cause	M		9.2.1.6		YES	ignore
Criticality Diagnostics	O		9.2.1.17		YES	ignore

## 9.1.78 CELL SYNCHRONISATION RECONFIGURATION REQUEST [TDD]

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	reject
Transaction ID	M		9.2.1.62		–	
C-ID	M		9.2.1.9		YES	reject
Time Slot	M		9.2.3.23	Applicable to 3.84Mcps TDD only. For 1.28Mcps TDD, the CRNC should set this to 0 and the Node B shall ignore it	YES	reject
Number Of Cycles Per SFN Period	M		9.2.3.7B		YES	reject
Number Of Repetitions Per Cycle Period	M		9.2.3.7C		YES	reject
<b>Cell Sync Burst Transmission Reconfiguration Information</b>		<i>0..&lt;maxno ofCellSync Bursts&gt;</i>		Applicable to 3.84Mcps TDD only	GLOBAL	reject
>CSB Transmission ID	M		9.2.3.4N		–	
>Sync Frame Number To Transmit	M		Sync Frame Number 9.2.3.18C		–	
>Cell Sync Burst Code	O		9.2.3.4G		–	
>Cell Sync Burst Code Shift	O		9.2.3.4H		–	
>DL Transmission Power	O		DL Power 9.2.1.21		–	
<b>Cell Sync Burst Measurement Reconfiguration Information</b>		<i>0..1</i>		Applicable to 3.84Mcps TDD only	YES	reject
>Cell Sync Burst Measurement Information		<i>1..&lt;maxno ofCellSync Bursts&gt;</i>			–	
>>Sync Frame Number To Receive	M		Sync Frame Number 9.2.3.18C		–	
>>Cell Sync Burst Information		<i>1..&lt;maxno ofreception perSync Frame&gt;</i>			–	
>>>CSB Measurement ID	M		9.2.3.4I		–	
>>>Cell Sync Burst Code	M		9.2.3.4G		–	
>>>Cell Sync Burst Code Shift	M		9.2.3.4H		–	
>Synchronisation Report Type	O		9.2.3.18E		–	
>Synchronisation Report Characteristics	O		9.2.3.18D		–	
Number Of Subcycles Per Cycle Period	O		9.2.3.7D	Applicable to 1.28Mcps TDD only	YES	reject

<b>SYNC_DL Code Transmission Reconfiguration Information LCR</b>		<i>0..&lt;maxno ofSyncFramesLCR&gt;</i>		Applicable to 1.28Mcps TDD only	GLOBAL	reject
>CSB Transmission ID	M		9.2.3.4N		–	
>Sync Frame Number For Transmission	M		Sync Frame Number 9.2.3.18C		–	
>UARFCN	M		9.2.1.65		–	
>SYNC_DL Code ID	O		9.2.3.18B		–	
>DwPCH Power	O		9.2.3.5B		–	
<b>SYNC_DL Code Measurement Reconfiguration Information LCR</b>		<i>0..1</i>		Applicable to 1.28Mcps TDD only	YES	reject
<b>&gt;SYNC_DL Code Measurement Information LCR</b>		<i>1..&lt;maxno ofSyncDL CodesLCR&gt;</i>			–	
>>Sync Frame Number To Receive	M		Sync Frame Number 9.2.3.18C		–	
<b>&gt;&gt;Sync_DLCode Information LCR</b>		<i>1..&lt;maxno ofreceptionsperSyncFrameLCR&gt;</i>			–	
>>>CSB Measurement ID	M		9.2.3.4I		–	
>>>SYNC_DL Code ID	M		9.2.3.18B		–	
>>>UARFCN	M		9.2.1.65		–	
>>>Propagation Delay Compensation	O		Timing Adjustment Value LCR 9.2.3.22b		–	
>Synchronisation Report Type	O		9.2.3.18E		–	
>Synchronisation Report Characteristics	O		9.2.3.18D		–	

Range Bound	Explanation
<i>maxnoofCellSyncBursts</i>	Maximum number of cell synchronisation bursts per cycle for 3.84Mcps TDD
<i>maxnoofreceptionsperSyncFrame</i>	Maximum number of cell synchronisation burst receptions per Sync Frame for 3.84Mcps TDD
<i>maxnoofSyncFramesLCR</i>	Maximum number of Sync Frames per subcycle for 1.28Mcps TDD
<i>maxnoofreceptionsperSyncFrameLCR</i>	Maximum number of SYNC_DL Code ID receptions per Sync Frame for 1.28Mcps TDD

## 9.1.79 CELL SYNCHRONISATION RECONFIGURATION RESPONSE [TDD]

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	reject
Transaction ID	M		9.2.1.62		–	
Criticality Diagnostics	O		9.2.1.17		YES	ignore

## 9.1.80 CELL SYNCHRONISATION RECONFIGURATION FAILURE [TDD]

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	reject
Transaction ID	M		9.2.1.62		–	
Cause	M		9.2.1.6		YES	ignore
Criticality Diagnostics	O		9.2.1.17		YES	ignore

## 9.1.81 CELL SYNCHRONISATION REPORT [TDD]

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	ignore
Transaction ID	M		9.2.1.62		–	
<b>Cell Synchronisation Information</b>		1..<maxCellsInNodeB>			EACH	ignore
>C-ID	M		9.2.1.9		YES	ignore
>CHOICE <i>Synchronisation Report Type</i>	M				YES	ignore
>>Initial Phase or Steady-State Phase					–	
>>>Cell Sync Burst Measured Information		0..<maxNumberOfCellSyncBursts>		Mandatory for 3.84Mcps TDD. Not Applicable to 1.28Mcps TDD.	–	
>>>>SFN	M		9.2.1.53A		–	
>>>>Cell Sync Burst Information		1..<maxNumberOfReceptionSyncFrame>			–	
>>>>>CHOICE <i>Cell Sync Burst Availability Indicator</i>	M				–	
>>>>>>Cell Sync Burst Available					–	
>>>>>>>Cell Sync Burst Timing	M		9.2.3.4L		–	
>>>>>>>Cell Sync Burst SIR	M		9.2.3.4K		–	
>>>>>>>Cell Sync Burst Not Available			NULL		–	
>>>Accumulated Clock Update	O		Timing Adjustment Value 9.2.3.22a		–	
>>>>SYNC_DL Codes Measured Information		0..<maxNumberOfSyncFramesLCR>		Mandatory for 1.28Mcps TDD. Not Applicable to 3.84Mcps TDD.	YES	ignore
>>>>>SFN	M		9.2.1.53A		–	
>>>>>>SYNC_DL Code Information		1..<maxNumberOfReceptionSyncFrameLCR>			–	



		>				
>>>>CHOICE SYNC_DL Code Availability Indicator	M					–
>>>>>SYNC_DL Code Available						–
>>>>>>SYNC_ DL Code ID Timing	M		Cell Sync Burst Timing LCR 9.2.3.4La			–
>>>>>>SYNC_ DL Code ID SIR	M		Cell Sync Burst SIR 9.2.3.4K			–
>>>>>>SYNC_DL Code Not Available			NULL			–
>>Late-Entrant Cell			NULL			–
>>Frequency Acquisition			NULL			–

Range Bound	Explanation
<i>maxCellinNodeB</i>	Maximum number of Cells in a Node B
<i>maxnoofCellSyncBursts</i>	Maximum number of cell synchronisation bursts per cycle for 3.84Mcps TDD
<i>maxnoofreceptionsperSyncFrame</i>	Maximum number of cell synchronisation burst receptions per Sync Frame for 3.84Mcps TDD
<i>maxnoofSyncFramesLCR</i>	Maximum number of SYNC Frames per measurement reporting period for 1.28Mcps TDD
<i>maxnoofreceptionsperSyncFrameLCR</i>	Maximum number of SYNC_DL Code ID receptions per Sync Frame for 1.28Mcps TDD

### 9.1.82 CELL SYNCHRONISATION TERMINATION REQUEST [TDD]

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	ignore
Transaction ID	M		9.2.1.62		–	
C-ID	M		9.2.1.9		YES	ignore
CSB Transmission ID	O		9.2.3.4N		YES	ignore
CSB Measurement ID	O		9.2.3.4I		YES	ignore

### 9.1.83 CELL SYNCHRONISATION FAILURE INDICATION [TDD]

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	ignore
Transaction ID	M		9.2.1.62		–	
C-ID	M		9.2.1.9		YES	ignore
CSB Transmission ID	O		9.2.3.4N		YES	ignore
CSB Measurement ID	O		9.2.3.4I		YES	ignore
Cause	M		9.2.1.6		YES	ignore

### 9.1.84 CELL SYNCHRONISATION ADJUSTMENT REQUEST [TDD]

IE/Group Name	Presence	Range	IE Type and	Semantics Description	Criticality	Assigned Criticality
---------------	----------	-------	-------------	-----------------------	-------------	----------------------

			Reference			
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	reject
Transaction ID	M		9.2.1.62		–	
<b>Cell Adjustment Information</b>		<i>1..&lt;maxCellsInNodeB&gt;</i>			EACH	ignore
>C-ID	M		9.2.1.9		–	
>Frame Adjustment Value	O		9.2.3.5C		–	
>Timing Adjustment Value	O		9.2.3.22a	Applicable to 3.84Mcps TDD only	–	
>DL Transmission Power	O		9.2.1.21	Applicable to 3.84Mcps TDD only	–	
>SFN	O		9.2.1.53A		–	
>DwPCH Power	O		9.2.3.5B	Applicable to 1.28Mcps TDD only	YES	ignore
>Timing Adjustment Value LCR	O		9.2.3.22b	Applicable to 1.28Mcps TDD only	YES	ignore

Range Bound	Explanation
<i>maxCellsInNodeB</i>	Maximum number of Cells in a Node B

### 9.1.85 CELL SYNCHRONISATION ADJUSTMENT RESPONSE [TDD]

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	reject
Transaction ID	M		9.2.1.62		–	
Criticality Diagnostics	O		9.2.1.17		YES	ignore

### 9.1.86 CELL SYNCHRONISATION ADJUSTMENT FAILURE [TDD]

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	reject
Transaction ID	M		9.2.1.62		–	
CHOICE <i>Cause Level</i>	M				YES	ignore
> <i>General</i>					–	
>> <i>Cause</i>	M		9.2.1.6		–	
> <i>Cell Specific</i>					–	
>> <b>Unsuccessful Cell Information Response</b>		<i>1..&lt;maxCellsInNodeB&gt;</i>			EACH	ignore
>>>C-ID	M		9.2.1.9		–	
>>>Cause	M		9.2.1.6		–	
Criticality Diagnostics	O		9.2.1.17		YES	ignore

Range Bound	Explanation
<i>maxCellsInNodeB</i>	Maximum number of Cells in a Node B

## 9.1.87 BEARER REARRANGEMENT INDICATION

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	ignore
Transaction ID	M		9.2.1.62		–	
CRNC Communication Context ID	M		9.2.1.18	The reserved value "All CRNCCC" shall not be used.	YES	ignore
Signalling Bearer Request Indicator	O		9.2.1.55A		YES	ignore
<b>DCHs To Re-arrange</b>		<i>0..&lt;maxno ofDCHs&gt;</i>			GLOBAL	ignore
>DCH ID	M		9.2.1.20		–	
<b>DSCHs To Re-arrange</b>		<i>0..&lt;maxno ofDSCHs&gt;</i>			GLOBAL	ignore
>DSCH ID	M		9.2.1.27		–	
<b>USCHs To Re-arrange</b>		<i>0..&lt;maxno ofUSCHs&gt;</i>		TDD only	GLOBAL	ignore
>USCH ID	M		9.2.3.27		–	
TFCI2 Bearer Request Indicator	O		9.2.1.56C	FDD only	YES	ignore
<b>HS-DSCHs MAC-d Flow To Re-arrange</b>		<i>0..&lt;maxno ofMACdFlows&gt;</i>			GLOBAL	ignore
>HS-DSCH MAC-d Flow ID	M		9.2.1.31I		–	

Range bound	Explanation
<i>maxnoofDCHs</i>	Maximum number of DCHs for a UE
<i>maxnoofDSCHs</i>	Maximum number of DSCHs for a UE
<i>maxnoofUSCHs</i>	Maximum number of USCHs for a UE
<i>maxnoofMACdFlows</i>	Maximum number of HS-DSCH MAC-d flows

## 9.1.88 RADIO LINK ACTIVATION COMMAND

### 9.1.88.1 FDD Message

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	ignore
Transaction ID	M		9.2.1.62		–	
Node B Communication Context ID	M		9.2.1.48		YES	ignore
<b>Delayed Activation Information</b>		<i>1..&lt;maxno ofRLs&gt;</i>			EACH	ignore
>RL ID	M		9.2.1.53		–	
>Delayed Activation Update	M		9.2.1.24D		–	

Range Bound	Explanation
<i>maxnoofRLs</i>	Maximum number of RLs for one UE

## 9.1.88.2 TDD Message

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	ignore
Transaction ID	M		9.2.1.62		–	
Node B Communication Context ID	M		9.2.1.48		YES	ignore
<b>Delayed Activation Information</b>		1..<maxno ofRLs>			EACH	ignore
>RL ID	M		9.2.1.53		–	
>Delayed Activation Update	M		9.2.1.24D		–	

Range Bound	Explanation
<i>maxnoofRLs</i>	Maximum number of RLs for one UE

## 9.1.89 RADIO LINK PARAMETER UPDATE INDICATION

## 9.1.89.1 FDD Message

IE/Group name	Presence	Range	IE Type and Reference	Semantic Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	ignore
Transaction ID	M		9.2.1.62		–	
CRNC Communication Context ID	M		9.2.1.18	The reserved value "All CRNCCC" shall not be used.	YES	ignore
HS-DSCH FDD Update Information	O		9.2.2.18Ea		YES	ignore

## 9.1.89.2 TDD Message

IE/Group name	Presence	Range	IE Type and Reference	Semantic Description	Criticality	Assigned Criticality
Message Discriminator	M		9.2.1.45		–	
Message Type	M		9.2.1.46		YES	ignore
Transaction ID	M		9.2.1.62		–	
CRNC Communication Context ID	M		9.2.1.18	The reserved value "All CRNCCC" shall not be used.	YES	ignore
HS-DSCH TDD Update Information	O		9.2.3.5GA		YES	ignore

## 9.2 Information Element Functional Definition and Contents

### 9.2.0 General

Subclause 9.2 presents the NBAP IE definitions in tabular format. The corresponding ASN.1 definition is presented in Subclause 9.3. In case there is a contradiction between the tabular format in Subclause 9.2 and the ASN.1 definition, the ASN.1 shall take precedence, except for the definition of conditions for the presence of conditional elements, where the tabular format shall take precedence.

When specifying information elements which are to be represented by bitstrings, if not otherwise specifically stated in the semantics description of the concerned IE or elsewhere, the following principle applies with regards to the ordering of bits:

- The first bit (leftmost bit) contains the most significant bit (MSB);
- The last bit (rightmost bit) contains the least significant bit (LSB);
- When importing bitstrings from other specifications, the first bit of the bitstring contains the first bit of the concerned information;

### 9.2.1 Common parameters

#### 9.2.1.1 Add/Delete Indicator

The add/delete indicator shall notify the CRNC whether the associated resource has been added to or removed from the Node B.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Add/Delete Indicator			ENUMERATED (Add, Delete)	

#### 9.2.1.1A Allocation/Retention Priority

This parameter indicates the priority level in the allocation and retention of Node B internal resources. See Annex A.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Priority Level	M		INTEGER (0..15)	This IE indicates the priority of the request. <b>Usage:</b> Value "0" means "Spare"; It shall be treated as a logical error if received. Values between "1" and "14" are ordered in decreasing order of priority, "1" being the highest and "14" the lowest. Value "15" means "No Priority".
Pre-emption Capability	M		ENUMERATED (shall not trigger pre-emption, may trigger pre-emption)	
Pre-emption Vulnerability	M		ENUMERATED (not pre-emptable, pre-emptable)	

### 9.2.1.2 Availability Status

The availability status is used to indicate more detailed information of the availability of the resource. In accordance with ref. [6], following values are defined. If the value of this IE is "empty", this implies that none of the status conditions described in ref. [6] are present.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Availability Status			ENUMERATED (empty, in test, failed, power off, off line, off duty, dependency, degraded, not installed, log full, ...)	

### 9.2.1.3 BCCH Modification Time

Indicates the time after which the new system information shall be applied on BCCH.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
BCCH Modification Time			INTEGER (0..511)	All SFN values in which MIB may be mapped are allowed. The tabular description is presented in [18].

### 9.2.1.4 Binding ID

The Binding ID is the identifier of a user data stream.

In case of transport bearer establishment with ALCAP [2][31], this IE contains the identifier that is allocated at the Node B and that is unique for each transport bearer under establishment to/from the Node B.

If the Transport Layer Address contains an IP address [29], this IE contains the UDP port [30] intended to be used for the user plane transport.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Binding ID			OCTET STRING (1..4,...)	If the Binding ID includes an UDP port, the UDP port is included in octets 1 and 2. The first octet of the UDP port field shall be included in the first octet of the Binding ID.

#### 9.2.1.4A BLER

Void.

### 9.2.1.5 Blocking Priority Indicator

The Blocking priority indicator shall indicate the immediacy with which a resource should be blocked from use. The following priority classes shall be supported in the Blocking priority indicator.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Blocking Priority Indicator			ENUMERATED ( High, Normal, Low, ...)	"High" priority: Block resource immediately. "Normal" priority: Block resource when idle or upon timer expiry. "Low" priority: Block resource when idle.

### 9.2.1.5A Burst Mode Parameters

The *Burst Mode Parameters* IE provides information to be applied for IPDL burst mode.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Burst Start	M		INTEGER (0..15)	See [10] and [21]
Burst Length	M		INTEGER (10..25)	See [10] and [21]
Burst Freq	M		INTEGER (1..16)	See [10] and [21]

9.2.1.6 Cause

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
CHOICE Cause Group	M			
>Radio Network Layer				
>>Radio Network Layer Cause	M		ENUMERATED ( unknown C-ID, Cell not available, Power level not supported, DL radio resources not available, UL radio resources not available, RL Already Activated/allocated, Node B Resources Unavailable, Measurement not supported for the object, Combining Resources not available, Requested configuration not supported, Synchronization failure, Priority transport channel established, SIB Origination in Node B not Supported, Requested Tx Diversity Mode not supported, Unspecified, BCCH scheduling error, Measurement Temporarily not Available, Invalid CM Setting, Reconfiguration CFN not elapsed, Number of DL codes not supported, S-CPICH not supported, Combining not supported, UL SF not supported, DL SF not supported, Common Transport Channel Type not supported, Dedicated Transport Channel Type not supported, Downlink Shared Channel Type not supported, Uplink Shared Channel Type not supported, CM not supported, Tx diversity no longer supported, Unknown Local Cell ID, ..., Number of UL codes not supported, Information temporarily not available, Information Provision not supported for the object, Cell Synchronisation not supported, Cell Synchronisation Adjustment not supported, DPC Mode Change not Supported,	



			IPDL already activated, IPDL not supported, IPDL parameters not available, Frequency Acquisition not supported, Power Balancing status not compatible, Requested type of Bearer Re-arrangement not supported, Signalling Bearer Re-arrangement not supported, Bearer Re-arrangement needed, Delayed Activation not Supported, RL Timing Adjustment not supported)	
>Transport Layer				
>>Transport Layer Cause	M		ENUMERATED ( Transport resource unavailable, Unspecified, ...)	
>Protocol				
>>Protocol Cause	M		ENUMERATED ( Transfer syntax error, Abstract syntax error (reject), Abstract syntax error (ignore and notify), Message not compatible with receiver state, Semantic error, Unspecified, Abstract syntax error (falsely constructed message), ...)	
>Misc				
>>Miscellaneous Cause	M		ENUMERATED ( Control processing overload Hardware failure, O&M intervention, Not enough user plane processing resources, Unspecified, ...)	

The meaning of the different cause values is described in the following table. In general, "not supported" cause values indicate that the concerned capability is missing. On the other hand, "not available" cause values indicate that the concerned capability is present, but insufficient resources were available to perform the requested action.

Radio Network Layer cause	Meaning
BCCH scheduling error	The Node B has detected an illegal BCCH schedule update (see subclause 8.2.16.3).
Bearer Re-arrangement needed	The Node B cannot perform the requested Radio Link Reconfiguration without bearer re-arrangement.

Cell not Available	The concerned cell or local cell is not available.
Cell Synchronisation not supported	The concerned cell(s) do not support Cell Synchronisation.
Combining not supported	The Node B does not support RL combining for the concerned cells.
Combining Resources Not Available	The value of the received <i>Diversity Control Field</i> IE was set to "Must", but the Node B cannot perform the requested combining.
CM not supported	The concerned cell(s) do not support Compressed Mode.
Common Transport Channel Type not supported	The concerned cell(s) do not support the RACH and/or FACH and/or CPCH Common Transport Channel Type.
Dedicated Transport Channel Type not supported	The concerned cell(s) do not support the Dedicated Transport Channel Type.
Delayed Activation not Supported	The concerned cell(s) do not support delayed activation of RLs.
DL Radio Resources not Available	The Node B does not have sufficient DL radio resources available.
DL SF not supported	The concerned cell(s) do not support the requested DL SF.
DL Shared Channel Type not supported	The concerned cell(s) do not support the Downlink Shared Channel Type.
DPC Mode Change not Supported	The concerned cells do not support DPC mode changes.
Frequency Acquisition not supported	The concerned cell(s) do not support Frequency Acquisition.
Information Provision not supported for the object	The requested information provision is not supported for the concerned object types.
Information temporarily not available	The requested information can temporarily not be provided.
Invalid CM Settings	The concerned cell(s) consider the requested Compressed Mode settings invalid.
IPDL already activated	The concerned cell(s) have already active IPDL ongoing.
IPDL not supported	The concerned cell(s) do not support the IPDL.
IPDL parameters not available	The concerned cell(s) do not have IPDL parameters defining IPDL to be applied.
Measurement not Supported For The Object	At least one of the concerned cell(s) does not support the requested measurement on the concerned object type.
Measurement Temporarily not Available	The Node B can temporarily not provide the requested measurement value.
Node B resources unavailable	The Node B does not have sufficient resources available.
Number of DL codes not supported	The concerned cell(s) do not support the requested number of DL codes.
Number of UL codes not supported	The concerned cell(s) do not support the requested number of UL codes.
Power Level not Supported	A DL power level was requested which the concerned cell(s) do not support.
Power Balancing status not compatible	The power balancing status in the SRNC is not compatible with that of the Node B.
Priority transport channel established	The CRNC cannot perform the requested blocking since a transport channel with a high priority is present.
RL Timing Adjustment not Supported	The concerned cell(s) do not support adjustments of the RL timing.
Reconfiguration CFN not elapsed	The requested action cannot be performed due to that a RADIO LINK RECONFIGURATION COMMIT message was received previously, but the concerned CFN has not yet elapsed.
Requested Configuration not Supported	The concerned cell(s) do not support the requested configuration i.e. power levels, Transport Formats, physical channel parameters.
Requested Type of Bearer Re-arrangement not supported	The Node B does not support the requested type of bearer re-arrangement.
Requested Tx Diversity mode not supported	The concerned cell(s) do not support the requested transmit diversity mode.
RL already Activated/ allocated	The Node B has already allocated an RL with the requested RL-id for this UE context.
S-CPICH not supported	The concerned cell(s) do not support S-CPICH.
SIB Origination in Node B not Supported	The Node B does not support the origination of the requested SIB for the concerned cell.
Signalling Bearer Re-arrangement not supported	The Node B does not support the Signalling bearer re-arrangement.
Synchronisation Failure	Loss of UL Uu synchronisation.
Cell Synchronisation Adjustment not supported	The concerned cell(s) do not support Cell Synchronisation Adjustment.

Tx diversity no longer supported	Tx diversity can no longer be supported in the concerned cell.
UL Radio Resources not Available	The Node B does not have sufficient UL radio resources available.
UL SF not supported	The concerned cell(s) do not support the requested minimum UL SF.
UL Shared Channel Type not supported	The concerned cell(s) do not support the Uplink Shared Channel Type.
Unknown C-ID	The Node B is not aware of a cell with the provided C-ID.
Unknown Local Cell ID	The Node B is not aware of a local cell with the provided Local Cell ID
Unspecified	Sent when none of the above cause values applies but still the cause is Radio Network layer related.

<b>Transport Network Layer cause</b>	<b>Meaning</b>
Transport resource unavailable	The required transport resources are not available.
Unspecified	Sent when none of the above cause values applies but still the cause is Transport Network layer related.

<b>Protocol cause</b>	<b>Meaning</b>
Abstract Syntax Error (Reject)	The received message included an abstract syntax error and the concerned criticality indicated "reject" (see subclause 10.3).
Abstract Syntax Error (Ignore and Notify)	The received message included an abstract syntax error and the concerned criticality indicated "ignore and notify" (see subclause 10.3).
Abstract syntax error (falsely constructed message)	The received message contained IEs in wrong order or with too many occurrences (see subclause 10.3).
Message not Compatible with Receiver State	The received message was not compatible with the receiver state (see subclause 10.4).
Semantic Error	The received message included a semantic error (see subclause 10.4).
Transfer Syntax Error	The received message included a transfer syntax error (see subclause 10.2).
Unspecified	Sent when none of the above cause values applies but still the cause is protocol related.

<b>Miscellaneous cause</b>	<b>Meaning</b>
Control Processing Overload	Node B control processing overload.
Hardware Failure	Node B hardware failure.
Not enough User Plane Processing Resources	Node B has insufficient user plane processing resources available.
O&M Intervention	Operation and Maintenance intervention related to Node B equipment.
Unspecified	Sent when none of the above cause values applies and the cause is not related to any of the categories Radio Network Layer, Transport Network Layer or Protocol.

### 9.2.1.7 CFN

Connection Frame Number for the radio connection, see ref. [17].

<b>IE/Group Name</b>	<b>Presence</b>	<b>Range</b>	<b>IE Type and Reference</b>	<b>Semantics Description</b>
CFN			INTEGER (0..255)	

### 9.2.1.8 CFN Offset

Void.

### 9.2.1.9 C-ID

The C-ID (Cell identifier) is the identifier of a cell in one RNC.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
C-ID			INTEGER (0..65535)	

#### 9.2.1.9A Common Channels Capacity Consumption Law

The capacity consumption law indicates to the CRNC how the Capacity Credit is consumed by NBAP set of procedures, depending on the allocated Spreading Factor. [FDD - For the PRACH, the reference spreading factor shall be the minimum possible spreading factor amongst the ones defined by the *RACH Slot Format* IE(s) in the Common Transport Channel Setup or Reconfiguration procedures. For the PCPCH, the reference spreading factor shall be the minimum spreading factor computed from the TFCS as described in [8].]

This capacity consumption law indicates the consumption law to be used with the following procedures:

- Common Transport Channel Setup
- Common Transport Channel Deletion
- [FDD - Common Transport Channel Reconfiguration]

For the Common Transport Channel Setup procedure, the cost given in the consumption law shall be debited from the Capacity Credit, whereas it shall be credited to the Capacity Credit for the Common Transport Channel Deletion one.

[FDD - For the Common Transport Channel Reconfiguration procedure, the difference of the consumption cost for the new spreading factor and the consumption cost for the old spreading factor shall be debited from the Capacity Credit (or credited if this difference is negative).]

If the modelling of the internal resource capability of the Node B is modelled independently for the Uplink and Downlink, the "DL cost" shall be applied to the "DL or Global Capacity Credit" and the "UL Cost" shall be applied to the "UL Capacity Credit". If it is modelled as shared resources, both the "DL cost" and the "UL cost" shall be applied to the "DL or Global Capacity Credit".

[FDD - When the Common Transport Channel Setup, Deletion or Reconfiguration procedures are used, the Capacity Credit shall be updated considering all physical channels related in these procedures (S-CCPCH, PICH, PRACH, AICH, PCPCH, CD/CA-ICH and AP-AICH), i.e. one cost shall be credited to or debited from the Capacity Credit per physical channel.]

[FDD - The costs given in the consumption law are the costs per channelization code. When multiple channelization codes are used by a physical channel, the cost credited to or debited from the Capacity Credit for this physical channel shall be taken as N times the cost given in the consumption law, where N is the number of channelization codes.]

[TDD - When the Common Transport Channel Setup or Deletion procedures are used, the Capacity Credit shall be updated considering all physical channels related in these procedures (S-CCPCH, PICH, PRACH), i.e. one cost shall be credited to or debited from the Capacity Credit per physical channel.]

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
<b>SF Allocation Law</b>		<i>1..&lt;maxno of SFs&gt;</i>		[FDD - For each SF, cost of its allocation: the first instance corresponds to SF = 4, the second to SF = 8, the third to SF = 16 and so on.] [TDD - For each SF, cost of its allocation: the first instance corresponds to SF = 1, the second to SF = 2, the third to SF = 4 and so on.]
>DL cost	M		INTEGER (0..65535)	
>UL cost	M		INTEGER (0..65535)	

Range Bound	Explanation
<i>maxnoofSFs</i>	Maximum number of Spreading Factors

### 9.2.1.9B Common Measurement Accuracy

The *Common Measurement Accuracy* IE indicates the accuracy of the common measurement.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
CHOICE <i>Common Measurement Accuracy</i>	M			
> <i>T<sub>UTRAN-GPS</sub> Measurement Accuracy Class</i>				
>> <i>T<sub>UTRAN-GPS</sub> Measurement Accuracy Class</i>	M		<i>T<sub>UTRAN-GPS</sub> Accuracy Class</i> 9.2.1.64C	

### 9.2.1.10 Common Measurement Object Type

Void.

### 9.2.1.11 Common Measurement Type

The Common Measurement Type identifies which measurement that shall be performed.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Common Measurement Type			ENUMERATED ( Received Total Wide Band Power, Transmitted Carrier Power, Acknowledged PRACH Preambles, UL Timeslot ISCP, Acknowledged PCPCH Access Preambles, Detected PCPCH Access Preambles, ..., UTRAN GPS Timing of Cell Frames for UE Positioning, SFN-SFN Observed Time Difference, Transmitted carrier power of all codes not used for HS-PDSCH or HS-SCCH transmission, HS-DSCH Required Power, HS-DSCH Provided Bit Rate, Received Total Wide Band Power for Cell Portion, Transmitted Carrier Power for Cell Portion, Transmitted carrier power of all codes not used for HS-PDSCH or HS-SCCH transmission for Cell Portion, UpPTS Interference)	"UL Timeslot ISCP" is used by TDD only, "Acknowledged PRACH Preambles", "Acknowledged PCPCH Access Preambles", "Detected PCPCH Access Preambles" are used by FDD only, "UpPTS interference" is used by 1.28Mcps TDD only

9.2.1.12 Common Measurement Value

The Common Measurement Value shall be the most recent value for this measurement, for which the reporting criteria were met.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
CHOICE <i>Common Measurement Value</i>	M				–	
> <i>Transmitted Carrier Power</i>					–	
>> <i>Transmitted Carrier Power Value</i>	M		INTEGER (0..100)	According to mapping in [22] and [23]	–	
> <i>Received Total Wide Band Power</i>					–	
>> <i>Received Total Wide Band Power Value</i>	M		INTEGER (0..621)	According to mapping in [22] and [23]	–	
> <i>Acknowledged PRACH Preambles</i>				FDD Only	–	
>> <i>Acknowledged PRACH Preamble Value</i>	M		INTEGER (0..240,...)	According to mapping in [22]	–	
> <i>UL Timeslot ISCP</i>				TDD Only	–	
>> <i>UL Timeslot ISCP</i>	M		INTEGER (0..127)	According to mapping in [23]	–	
> <i>Acknowledged PCPCH Access Preambles</i>				FDD Only	–	
>> <i>Acknowledged PCPCH Access Preambles</i>	M		INTEGER (0..15,...)	According to mapping in [22]	–	
> <i>Detected PCPCH Access Preambles</i>				FDD Only	–	
>> <i>Detected PCPCH Access Preambles</i>	M		INTEGER (0..240,...)	According to mapping in [22]	–	
> <i>Additional Common Measurement Values</i>					–	
>> <i>UTRAN GPS Timing Of Cell Frames for UE Positioning</i>					–	
>>> <i>T<sub>UTRAN-GPS</sub> Measurement Value Information</i>	M		9.2.1.64A		YES	ignore
>> <i>SFN-SFN Observed Time Difference</i>					–	
>>> <i>SFN-SFN Measurement Value Information</i>	M		9.2.1.53E		YES	ignore
>> <i>Transmitted Carrier Power Of All Codes Not Used For HS-PDSCH Or HS-SCCH Transmission</i>					–	
>>> <i>Transmitted Carrier Power Of All Codes Not Used For HS-PDSCH Or HS-SCCH Transmission Value</i>	M		INTEGER (0..100)	According to mapping in [22] and [23]	YES	ignore
>> <i>HS-DSCH Required Power</i>					–	
>>> <i>HS-DSCH Required Power Value Information</i>	M		9.2.1.31lc		YES	ignore

>>HS-DSCH Provided Bit Rate					–	
>>>HS-DSCH Provided Bit Rate Value Information	M		9.2.1.31Ib		YES	ignore
>>Transmitted Carrier Power For Cell Portion					–	
>>>Transmitted Carrier Power For Cell Portion Value		1..< maxNrOfCellPortions>		FDD Only	GLOBAL	ignore
>>>>Cell Portion ID	M		9.2.2.1Ca		–	
>>>>Transmitted Carrier Power Value	M		INTEGER (0..100)	According to mapping in [22]	–	
>>Received Total Wide Band Power For Cell Portion					–	
>>>Received Total Wide Band Power For Cell Portion Value		1..< maxNrOfCellPortions>		FDD Only	GLOBAL	ignore
>>>>Cell Portion ID	M		9.2.2.1Ca		–	
>>>>Received Total Wide Band Power Value	M		INTEGER (0..621)	According to mapping in [22]	–	
>>Transmitted Carrier Power Of All Codes Not Used For HS-PDSCH Or HS-SCCH Transmission For Cell Portion					–	
>>>Transmitted Carrier Power Of All Codes Not Used For HS- PDSCH Or HS- SCCH Transmission For Cell Portion Value		1..< maxNrOfCellPortions>		FDD Only	GLOBAL	ignore
>>>>Cell Portion ID	M		9.2.2.1Ca		–	
>>>>Transmitted Carrier Power Of All Codes Not Used For HS-PDSCH Or HS-SCCH Transmission Value	M		INTEGER (0..100)	According to mapping in [22]	–	
>>UpPTS interference				1.28Mcps TDD Only	–	
>>>UpPTS interference Value	M		INTEGER (0..127,...)	According to mapping in [23]	YES	reject

Range Bound	Explanation
MaxNrOfCellPortions	Maximum number of Cell Portions in a cell



### 9.2.1.12A Common Measurement Value Information

The *Common Measurement Value Information* IE provides information both on whether the Common Measurement Value is provided in the message or not and if provided also the Common Measurement Value itself.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
CHOICE <i>Measurement Availability Indicator</i>	M			
> <i>Measurement Available</i>				
>>Common Measurement Value	M		9.2.1.12	
> <i>Measurement Not Available</i>			NULL	

### 9.2.1.13 Common Physical Channel ID

Common Physical Channel ID is the unique identifier for one common physical channel within a cell.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Common Physical Channel ID			INTEGER (0..255)	

### 9.2.1.13A Common Physical Channel Status Information

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Common Physical Channel ID	M		9.2.1.13	
Resource Operational State	M		9.2.1.52	
Availability Status	M		9.2.1.2	

### 9.2.1.14 Common Transport Channel ID

Common Transport Channel ID is the unique identifier for one common transport channel within a cell.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Common Transport Channel ID			INTEGER (0..255)	

### 9.2.1.14A Common Transport Channel Information Response

The *Common Transport Channel Information Response* IE provides information for Common Transport Channels that have been established or modified.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Common Transport Channel ID	M		9.2.1.14	
Binding ID	O		9.2.1.4	
Transport Layer Address	O		9.2.1.63	

### 9.2.1.14B Common Transport Channel Status Information

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Common Transport Channel ID	M		9.2.1.14	
Resource Operational State	M		9.2.1.52	
Availability Status	M		9.2.1.2	

### 9.2.1.15 Communication Control Port ID

A Communication Control Port corresponds to one signalling bearer between the CRNC and the Node B for the control of Node B Communication Contexts. The Node B may have multiple Communication Control Ports (one per Traffic Termination Point). The Communication Control Port is selected at creation of the Node B Communication Context. The Communication Control Port ID is the identifier of the Communication Control Port.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Communication Control Port ID			INTEGER (0..65535)	

### 9.2.1.16 Configuration Generation ID

The Configuration Generation ID describes the generation of the configuration of logical resources in a cell.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Configuration Generation ID			INTEGER (0..255)	Value "0" means "No configuration". At possible wraparound of the ID counter in CRNC the value "0" shall not be used.

### 9.2.1.17 Criticality Diagnostics

The *Criticality Diagnostics* IE is sent by a Node B or the CRNC when parts of a received message have not been comprehended or are missing, or if the message contained logical errors. When applicable, it contains information about which IEs that were not comprehended or were missing.

For further details on how to use the *Criticality Diagnostics* IE, see Annex C.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
<b>Procedure ID</b>		<i>0..1</i>		Procedure ID is to be used if Criticality Diagnostics is part of Error Indication procedure, and not within the response message of the same procedure that caused the error	–	
>Procedure Code	M		INTEGER (0..255)		–	
>Ddmode	M		ENUMERATED (TDD, FDD, Common, ...)	"Common" = common to FDD and TDD.	–	
Triggering Message	O		ENUMERATED (initiating message, successful outcome, unsuccessful outcome, outcome)	The Triggering Message is used only if the Criticality Diagnostics is part of Error Indication.	–	
Procedure Criticality	O		ENUMERATED (reject, ignore, notify)	This Procedure Criticality is used for reporting the Criticality of the Triggering message (Procedure).	–	
Transaction ID	O		9.2.1.62		–	
<b>Information Element Criticality Diagnostics</b>		<i>0..&lt;max nooferrors&gt;</i>			–	
>IE Criticality	M		ENUMERATED (reject, ignore, notify)	The IE Criticality is used for reporting the criticality of the triggering IE. The value "ignore" shall never be used.	–	
>IE ID	M		INTEGER (0..65535)	The IE ID of the not understood or missing IE	–	
>Repetition Number	O		INTEGER (0..255)	The <i>Repetition Number</i> IE gives: <ul style="list-style-type: none"> <li>• for a not understood IE: The number of occurrences of the reported IE up to and including the not understood occurrence</li> <li>• for a missing IE: The number of occurrences up to but not including the missing occurrence.</li> </ul> Note: All the counted occurrences of the reported IE must have the same topdown hierarchical message structure of IEs with assigned criticality	–	

>Message Structure	O		9.2.1.45A	above them. The <i>Message Structure</i> IE describes the structure where the not understood or missing IE was detected. This IE is included if the not understood IE is not the top level of the message.	YES	ignore
>Type Of Error	M		ENUMERATED (not understood, missing, ...)		YES	ignore

Range Bound	Explanation
<i>maxnooferrors</i>	Maximum number of IE errors allowed to be reported with a single message.

### 9.2.1.18 CRNC Communication Context ID

The CRNC Communication Context ID is the identifier of the Communication Context in the CRNC.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
CRNC Communication Context ID			INTEGER (0..2 <sup>20</sup> – 1)	"2 <sup>20</sup> -1" is a reserved value indicating all the CRNC Communication Contexts that can be reached by the Communication Control Port (All CRNCCC).

### 9.2.1.18A CTFC

The CTFC is an integer number calculated in accordance with [18], subclause 14.10. Regarding the channel ordering, for all transport channels, 'TrCH1' corresponds to the transport channel having the lowest transport channel identity among all configured transport channels on this CCTrCH. 'TrCH2' corresponds to the transport channel having the next lowest transport channel identity, and so on.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
CHOICE <i>CTFC Format</i>	M			
>2 bits long				
>>CTFC value	M		INTEGER (0..3)	
>4 bits long				
>>CTFC value	M		INTEGER (0..15)	
>6 bits long				
>>CTFC value	M		INTEGER (0..63)	
>8 bits long				
>>CTFC value	M		INTEGER (0..255)	
>12 bits long				
>>CTFC value	M		INTEGER (0..4095)	
>16 bits long				
>>CTFC value	M		INTEGER (0..65535)	
>max nb bits long				
>>CTFC value	M		INTEGER (0..maxCTFC)	

Range Bound	Explanation
MaxCTFC	Maximum number of the CTFC value is calculated according to the following: $\sum_{i=1}^I (L_i - 1)P_i$ with the notation according to ref. [18]

9.2.1.19 DCH Combination Indicator

Void.

9.2.1.20 DCH ID

The DCH ID is the identifier of an active dedicated transport channel. It is unique for each active DCH among the active DCHs simultaneously allocated for the same UE.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
DCH ID			INTEGER (0..255)	

9.2.1.20A Dedicated Channels Capacity Consumption Law

The capacity consumption law indicates to the CRNC how the Capacity Credit is consumed by NBAP set of procedures, depending on the [FDD - allocated Spreading Factor and the RL/RLS situation] [TDD – allocated Spreading Factor on each DPCH and the assigned timeslot]. [FDD - In Uplink, the reference spreading factor shall be the minimum spreading factor signalled in the Radio Link Setup Request message (*Min UL Channelisation Code Length IE*).]

This capacity consumption law indicates the consumption law to be used with the following procedures :

- Radio Link Setup
- Radio Link Addition
- Radio Link Reconfiguration
- Radio Link Deletion
- [TDD - Physical Shared Channel Reconfiguration]

For the Radio Link Setup and Radio Link Addition procedures, the cost given in the consumption law shall be debited from the Capacity Credit, whereas it shall credited to the Capacity Credit for the Radio Link Deletion procedure. For the Radio Link Reconfiguration procedure, the difference of the consumption cost for the new spreading factor and the consumption cost for the old spreading factor shall be debited from the Capacity Credit (or credited when this difference is negative).

If the modelling of the internal resource capability of the Node B is modelled independently for the Uplink and Downlink, the DL cost shall be applied to the DL or Global Capacity Credit and the UL Cost shall be applied to the UL Capacity Credit. If it is modelled as shared resources, both the DL costs and the UL costs shall be applied to the DL or Global Capacity Credit.

[FDD - For a Radio Link creating a Radio Link Set (first RL of a RLS), the cost for the RL (cost 2) and RLS (cost 1) shall be taken into account. When adding a Radio Link to a Radio Link Set, only the RL cost (cost 2) shall be taken into account.

In the case where multiple Radio Links are established in one procedure, for every created Radio Link Set, the first Radio Link is always the Radio Link with the lowest repetition number.]

[FDD- When a PDSCH is allocated in the Radio Link Setup procedure, the processing cost associated to this PDSCH, equal to the DL cost RL, shall be debited from the Capacity Credit, in addition to the processing cost of the radio links. In a similar way, this cost shall be credited to the Capacity Credit, when a PDSCH is deleted and the difference between the new cost and the old cost shall be debited from the Capacity Credit (or credited if this difference is negative) when a PDSCH is reconfigured.]

[FDD - The costs given in the consumption law are the costs per channelization code. When multiple channelization codes are used by either the radio links or the PDSCH, the cost credited to or debited from the Capacity Credit shall be taken as N times the cost for one code, where N is the number of channelization codes.]

[TDD -The cost for a radio link is a sum of the costs for each DPCH. For the first DPCH assigned to any user in a cell within a timeslot, the initial cost for a DPCH in a timeslot (cost 1) and the cost for a DPCH (cost 2) shall be taken into account. For any DPCH that is not the first DPCH assigned for any user in a cell within a timeslot, only the cost for a DPCH (cost 2) shall be taken into account.]

[TDD – The cost for shared channels is the sum of the costs for each PDSCH and PUSCH assigned to a PUSCH or PDSCH set. For the first PDSCH or PUSCH assigned to any user in a cell within a timeslot, the initial cost for a PDSCH/PUSCH in a timeslot (cost 1) and the cost for a PDSCH/PUSCH (cost 2) shall be taken into account. For any PDSCH/PUSCH that is not the first PDSCH/PUSCH assigned to any user in a cell within a timeslot, only the cost for a PDSCH/PUSCH (cost 2) shall be taken into account.]

[TDD - In the case of Physical Shared Channel Reconfiguration, the sum of the consumption cost of the each PDSCH/PUSCH of the previous configuration shall be credited to the capacity credit, and the sum of the consumption cost of each PDSCH/PUSCH of the new configuration shall be subtracted from the capacity credit.]

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
<b>SF Allocation Law</b>		<i>1..&lt;maxno of SFs&gt;</i>		[FDD - For each SF, cost of its allocation: the first instance corresponds to SF = 4, the second to SF = 8, the third to SF = 16 and so on.] [TDD – For each SF, cost of its allocation: the first instance corresponds to SF = 1, the second to SF = 2, the third to SF = 4 and so on.]
>DL Cost 1	M		INTEGER (0..65535)	[FDD – This is the cost of a RLS.] [TDD – This is the additional cost of the first DPCH/PDSCH/PUSCH assigned to any user in a cell within a timeslot.]
>DL Cost 2	M		INTEGER (0..65535)	[FDD – This is the cost of a RL.] [TDD – This is the cost of a DPCH/PDSCH/PUSCH]
>UL Cost 1	M		INTEGER (0..65535)	FDD – This is the cost of a RLS.] [TDD – This is the additional cost of the first DPCH/PDSCH/PUSCH assigned to any user in a cell within a timeslot.]
>UL Cost 2	M		INTEGER (0..65535)	[FDD – This is the cost of a RL.] [TDD – This is the cost of a DPCH/PDSCH/PUSCH.]

Range Bound	Explanation
<i>maxnoofSFs</i>	Maximum number of Spreading Factors

### 9.2.1.20B DL Or Global Capacity Credit

The capacity credit indicates to the CRNC the Downlink or global capacity of a Local Cell or a Local Cell Group.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
DL Or Global Capacity Credit			INTEGER (0..65535)	

### 9.2.1.20C DCH Information Response

The *DCH Information Response* IE provides information for DCHs that have been established or modified.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
<b>DCH Information Response</b>		<i>1..&lt;maxno ofDCHs&gt;</i>		Only one DCH per set of coordinated DCHs shall be included
>DCH ID	M		9.2.1.20	
>Binding ID	O		9.2.1.4	
>Transport Layer Address	O		9.2.1.63	

Range Bound	Explanation
<i>maxnoofDCHs</i>	Maximum number of DCH per UE

### 9.2.1.21 DL Power

The *DL Power* IE indicates a power level relative to the [FDD - primary CPICH power] [TDD - primary CCPCH power] configured in a cell. If Transmit Diversity is applied to a downlink physical channel, the *DL Power* IE indicates the power offset between the linear sum of the power for this downlink physical channel on all branches and the [FDD - primary CPICH power] [TDD - PCCPCH power] configured in a cell.

[FDD - If referred to a DPCH, it indicates the power of the transmitted DPDCH symbols.] [FDD - If referred to a DL-DPCCH for CPCH, it indicates the power of the transmitted pilot symbols].

[TDD - If referred to a DPCH or PDSCH, it indicates the power of a spreading factor 16 code, the power for a spreading factor 1 code would be 12 dB higher. If referred to a SCCPCH, the *DL Power* IE specifies the maximum power of the SCCPCH.]

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
DL Power			INTEGER (-350..150)	Value = DL Power /10 Unit: dB Range: -35.0 .. +15.0 dB Step: 0.1dB

### 9.2.1.22 Dedicated Measurement Object Type

Void.

### 9.2.1.23 Dedicated Measurement Type

The Dedicated Measurement Type identifies the type of measurement that shall be performed.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Dedicated Measurement Type			ENUMERATED ( SIR, SIR Error, Transmitted Code Power, RSCP, Rx Timing Deviation, Round Trip Time, ..., Rx Timing Deviation LCR, Angle Of Arrival LCR, HS-SICH reception quality, Best Cell Portions)	"RSCP" and "HS-SICH reception quality " are used by TDD only. "Rx Timing Deviation" is used by 3.84Mcps TDD only. "Rx Timing Deviation LCR", "Angle Of Arrival LCR" are used by 1.28Mcps TDD only. "Round Trip Time", "SIR Error" are used by FDD only. "Best Cell Portions" is used by FDD only.

Note: For definitions of the measurement types refer to [4] and [5].

#### 9.2.1.24 Dedicated Measurement Value

The Dedicated Measurement Value shall be the most recent value for this measurement, for which the reporting criteria were met.



IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
CHOICE <i>Dedicated Measurement Value</i>	M				–	
> <i>SIR Value</i>					–	
>> <i>SIR Value</i>	M		INTEGER (0..63)	According to mapping in [22] and [23]	–	
> <i>SIR Error Value</i>				FDD only	–	
>> <i>SIR Error Value</i>	M		INTEGER (0..125)	According to mapping in [22]	–	
> <i>Transmitted Code Power Value</i>					–	
>> <i>Transmitted Code Power Value</i>	M		INTEGER (0..127)	According to mapping in [22] and [23]. Values 0 to 9 and 123 to 127 shall not be used.	–	
> <i>RSCP</i>				TDD only	–	
>> <i>RSCP</i>	M		INTEGER (0..127)	According to mapping in [23]	–	
> <i>Rx Timing Deviation Value</i>				Applicable to 3.84Mcps TDD only	–	
>> <i>Rx Timing Deviation</i>	M		INTEGER (0..8191)	According to mapping in [23]	–	
> <i>Round Trip Time</i>				FDD only	–	
>> <i>Round Trip Time</i>	M		INTEGER (0..32767)	According to mapping in [22]	–	
> <i>Additional Dedicated Measurement Values</i>					–	
>> <i>Rx Timing Deviation Value LCR</i>				Applicable to 1.28Mcps TDD only	–	
>>> <i>Rx Timing Deviation LCR</i>	M		INTEGER (0..511)	According to mapping in [23]	YES	reject
>> <i>Angle Of Arrival Value LCR</i>				Applicable to 1.28Mcps TDD only	–	
>>> <i>AOA Value LCR</i>		1			YES	reject
>>>> <i>AOA LCR</i>	M		INTEGER (0..719)	According to mapping in [23]	–	
>>>> <i>AOA LCR Accuracy Class</i>	M		ENUMERATE D (A, B, C, D, E, F, G, H,...)	According to mapping in [23]	–	
>> <i>HS-SICH Reception Quality</i>				Applicable to TDD only	–	
>>> <i>HS-SICH Reception Quality Value</i>		1			YES	reject
>>>> <i>Failed HS-SICH</i>	M		INTEGER (0..20)	According to mapping in [23]	–	
>>>> <i>Missed HS-SICH</i>	M		INTEGER (0..20)	According to mapping in [23]	–	
>>>> <i>Total HS-SICH</i>	M		INTEGER (0..20)	According to mapping in [23]	–	
>> <i>Best Cell Portions</i>				FDD only	YES	reject
>>> <i>Best Cell Portions</i>	M		9.2.2.1Ba		–	

### 9.2.1.24A Dedicated Measurement Value Information

The *Dedicated Measurement Value Information* IE provides information both on whether or not the Dedicated Measurement Value is provided in the message or not and if provided also the Dedicated Measurement Value itself.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
CHOICE <i>Measurement Availability Indicator</i>	M			
> <i>Measurement Available</i>				
>>Dedicated Measurement Value	M		9.2.1.24	
>>CFN	O		9.2.1.7	Dedicated Measurement Time Reference
> <i>Measurement Not Available</i>			NULL	

### 9.2.1.24B DGPS Corrections

The DGPS Corrections IE contains DGPS information used by the UE Positioning A-GPS method. For further details on the meaning of parameters, see [28].

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
GPS TOW	M		INTEGER (0..604799)	Time in seconds. This field indicates the baseline time for which the corrections are valid.
Status/Health	M		ENUMERATED ( UDRE scale 1.0, UDRE scale 0.75, UDRE scale 0.5, UDRE scale 0.3, UDRE scale 0.1, no data, invalid data)	This field indicates the status of the differential corrections.
<b>Satellite Information</b>		<i>1..&lt;maxNo Sat&gt;</i>		
>SatID	M		INTEGER (0..63)	Satellite ID
>IODE	M		BIT STRING (8)	This IE is the sequence number for the ephemeris for the particular satellite. It can be used to determine if new ephemeris is used for calculating the corrections that are provided. This eight-bit IE is incremented for each new set of ephemeris for the satellite and may occupy the numerical range of [0, 239] during normal operations.
>UDRE	M		ENUMERATED ( UDRE $\leq 1.0\text{m}$ , $1.0\text{m} < \text{UDRE} \leq 4.0\text{m}$ , $4.0\text{m} < \text{UDRE} \leq 8.0\text{m}$ , $8.0\text{m} < \text{UDRE}$ )	User Differential Range Error. This field provides an estimate of the uncertainty (1- $\sigma$ ) in the corrections for the particular satellite. The value in this field shall be multiplied by the UDRE Scale Factor in the common Corrections Status/Health field to determine the final UDRE estimate for the particular satellite
>PRC	M		INTEGER (-2047..2047)	Pseudo Range Correction Unit: m (meters) Step: 0.32 meters
>Range Correction Rate	M		INTEGER (-127..127)	Unit: m/s Step: 0.032 m/s

Range Bound	Explanation
<i>maxNoSat</i>	Maximum number of satellites for which information can be provided

### 9.2.1.24C Delayed Activation

The *Delayed Activation* IE indicates that the activation of the DL power shall be delayed until an indicated CFN or until a separate activation indication is received.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
CHOICE <i>Delayed Activation</i>	M			
> <i>CFN</i>				
>> <i>Activation CFN</i>	M		CFN 9.2.1.7	
> <i>Separate Indication</i>			NULL	

### 9.2.1.24D Delayed Activation Update

The *Delayed Activation Update* IE indicates a change of the activation of the DL power for a specific RL.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
CHOICE <i>Delayed Activation Update</i>	M			
> <i>Activate</i>				
>>CHOICE <i>Activation Type</i>	M			
>>> <i>Synchronised</i>				
>>>> <i>Activation CFN</i>	M		CFN 9.2.1.7	
>>>> <i>Unsynchronised</i>			NULL	
>> <i>Initial DL TX Power</i>	M		DL Power 9.2.1.21	
>> <i>First RLS Indicator</i>	O		9.2.2.16A	FDD Only
>> <i>Propagation Delay</i>	O		9.2.2.35	FDD Only
> <i>Deactivate</i>				
>>CHOICE <i>Deactivation Type</i>	M			
>>> <i>Synchronised</i>				
>>>> <i>Deactivation CFN</i>	M		CFN 9.2.1.7	
>>>> <i>Unsynchronised</i>			NULL	

### 9.2.1.24E Discard Timer

The *Discard Timer* IE defines the time to live for a MAC-hs SDU starting from the instant of its arrival into an HSDPA Priority Queue. The Node B shall use this information to discard out-of-data MAC-hs SDUs from the HSDPA Priority Queues.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Discard Timer			ENUMERATED (20, 40, 60, 80, 100, 120, 140, 160, 180, 200, 250, 300, 400, 500, 750, 1000, 1250, 1500, 1750, 2000, 2500, 3000, 3500, 4000, 4500, 5000, 7500, ...)	Unit: ms

### 9.2.1.25 Diversity Control Field

The Diversity Control Field indicates if the current RL may, must or must not be combined with the already existing RLs.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Diversity Control Field			ENUMERATED (May, Must, Must Not, ...)	

### 9.2.1.26 Diversity Indication

Void.

### 9.2.1.26A DL DPCH Timing Adjustment

Void.

### 9.2.1.27 DSCH ID

The DSCH ID uniquely identifies a DSCH within a Node B Communication Context.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
DSCH ID			INTEGER (0..255)	

### 9.2.1.27A DSCH Information Response

The *DSCH Information Response* IE provides information for DSCHs that have been established or modified.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
<b>DSCH Information Response</b>		1..<maxno of DSCHs>		
>DSCH ID	M		9.2.1.27	
>Binding ID	O		9.2.1.4	
>Transport Layer Address	O		9.2.1.63	

Range Bound	Explanation
<i>maxno of DSCHs</i>	Maximum number of DSCHs for one UE

### 9.2.1.28 DSCH Transport Format Set

Void.

### 9.2.1.29 DSCH Transport Format Combination Set

Void.

### 9.2.1.29aa E-DCH Capability

This parameter defines the E-DCH capability for a Local Cell.

<u>IE/Group Name</u>	<u>Presence</u>	<u>Range</u>	<u>IE Type and Reference</u>	<u>Semantics Description</u>
<u>E-DCH Capability</u>			<u>ENUMERATED (E-DCH Capable, E-DCH non Capable)</u>	

### 9.2.1.29ab E-DCH MAC-d Flows Information

The *E-DCH MAC-d Flows Information* IE is used for the establishment of E-DCH MAC-d flows.

<u>IE/Group Name</u>	<u>Presence</u>	<u>Range</u>	<u>IE Type and Reference</u>	<u>Semantics Description</u>
<u>E-DCH MAC-d Flow Specific Information</u>		<u>1..&lt;maxno ofMACdFlows&gt;</u>		
> <u>E-DCH MAC-d Flow ID</u>	<u>M</u>		<u>9.2.1.29ad</u>	
> <u>Binding ID</u>	<u>O</u>		<u>9.2.1.4</u>	<u>Shall be ignored if bearer establishment with ALCAP.</u>
> <u>Transport Layer Address</u>	<u>O</u>		<u>9.2.1.63</u>	<u>Shall be ignored if bearer establishment with ALCAP.</u>
> <u>Allocation/Retention Priority</u>	<u>M</u>		<u>9.2.1.1A</u>	
> <u>TNL QoS</u>	<u>O</u>		<u>9.2.1.58A</u>	
> <u>Payload CRC Presence Indicator</u>	<u>M</u>		<u>9.2.1.49</u>	
> <u>Maximum Number Of Transmissions For E-DCH</u>	<u>M</u>		<u>9.2.1.39a</u>	
<u>Data Description Indicator</u>		<u>1..&lt;maxno ofDDIs&gt;</u>		
> <u>E-DCH DDI Value</u>	<u>M</u>		<u>9.2.1.29ah</u>	
> <u>Associated E-DCH MAC-d Flow ID</u>	<u>M</u>		<u>E-DCH MAC-d Flow 9.2.1.29ad</u>	
> <u>MAC-d PDU Size</u>	<u>M</u>		<u>9.2.1.38A</u>	
> <u>Scheduling Priority Indicator</u>	<u>M</u>		<u>9.2.1.53H</u>	
> <u>MAC-es Guaranteed Bit Rate</u>	<u>O</u>		<u>9.2.1.38aa</u>	

<u>Range Bound</u>	<u>Explanation</u>
<u>maxnoofMACdFlows</u>	<u>Maximum number of E-DCH MAC-d flows</u>
<u>maxnoofDDIs</u>	<u>Maximum number of Data Description Indicators</u>

### 9.2.1.29ac E-DCH MAC-d Flows To Delete

The *E-DCH MAC-d Flows To Delete* IE is used for the removal of E-DCH MAC-d flows.

<u>IE/Group Name</u>	<u>Presence</u>	<u>Range</u>	<u>IE Type and Reference</u>	<u>Semantics Description</u>
<u>E-DCH MAC-d Flows To Delete</u>		<u>1..&lt;maxno ofMACdFlows&gt;</u>		
> <u>E-DCH MAC-d Flow ID</u>	<u>M</u>		<u>9.2.1.29ad</u>	

<u>Range Bound</u>	<u>Explanation</u>
<a href="#">maxnoofMACdFlows</a>	Maximum number of HS-DSCH MAC-d flows

### 9.2.1.29ad E-DCH MAC-d Flow ID

The E-DCH MAC-d Flow ID is the unique identifier for one MAC-d flow on E-DCH.

<u>IE/Group Name</u>	<u>Presence</u>	<u>Range</u>	<u>IE Type and Reference</u>	<u>Semantics Description</u>
<a href="#">E-DCH MAC-d Flow ID</a>			INTEGER (0..7)	

### 9.2.1.29ae E-DCH Physical Layer Category

The *E-DCH Physical Layer Category* IE defines a set of UE radio access capabilities related to E-DCH, as defined in [42].

**Note: Coding is FFS.**

### 9.2.1.29af E-RNTI

The E-RNTI is needed for the UE (or UE group) specific CRC in E-AGCH, see ref. [37].

<u>IE/Group Name</u>	<u>Presence</u>	<u>Range</u>	<u>IE Type and Reference</u>	<u>Semantics Description</u>
<a href="#">E-RNTI</a>			INTEGER (0..65535)	

### 9.2.1.29ag E-DCH Transport Format Combination Set (E-TFCS)

**Note: Coding is FFS**

### 9.2.1.29ah E-DCH DDI Value

The E-DCH DDI Value is the Data Description Indicator value identifying a unique combination of E-DCH MAC-d Flow ID and MAC-d PDU Size.

<u>IE/Group Name</u>	<u>Presence</u>	<u>Range</u>	<u>IE Type and Reference</u>	<u>Semantics Description</u>
<a href="#">E-DCH DDI Value</a>			INTEGER (0..63)	

### **9.2.1.29A End Of Audit Sequence Indicator**

Indicates if the AUDIT RESPONSE message ends an audit sequence or not.

<b>IE/Group Name</b>	<b>Presence</b>	<b>Range</b>	<b>IE Type and Reference</b>	<b>Semantics Description</b>
End Of Audit Sequence Indicator			ENUMERATED ( End of audit sequence, Not end of audit sequence)	"End of audit sequence" = all audit information has been provided by the Node B. "Not end of audit sequence" = more audit information is available.

### **9.2.1.29B FN Reporting Indicator**

The Frame Number Reporting Indicator indicates if the SFN or CFN shall be included together with the reported measurement value.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
FN Reporting Indicator			ENUMERATED ( FN Reporting Required, FN Reporting Not Required)	

### 9.2.1.30 Frame Handling Priority

This parameter indicates the priority level to be used during the lifetime of the DCH/DSCH for temporary restriction of the allocated resources due overload reason.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Frame Handling Priority			INTEGER (0..15)	"0" = lowest priority, ... "15" = highest priority

### 9.2.1.31 Frame Offset

The Frame Offset is the required offset between the dedicated channel downlink transmission frames (CFN, Connection Frame Number) and the broadcast channel frame offset (Cell Frame Number). The Frame Offset is used in the translation between Connection Frame Number (CFN) on Iub/Iur and the least significant 8 bits of SFN (System Frame Number) on Uu. The Frame Offset is UE and cell specific.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Frame Offset			INTEGER (0..255)	Frames

### 9.2.1.31A IB\_OC\_ID

The IB OC ID identifies the occurrence of a specific Information Block.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
IB OC ID			INTEGER (1..16)	

### 9.2.1.31B GPS Navigation Model & Time Recovery

This IE contains subframes 1 to 3 of the GPS navigation message. For further details on the meaning of parameters, see [27].

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
<b>Navigation Message 1to3</b>		1..<maxNoSat>		
>Transmission TOW	M		INTEGER (0..1048575)	Time of the Week when the message is broadcast.
>SatID	M		INTEGER (0..63)	Satellite ID of the satellite from which the information is obtained
>TLM Message	M		BIT STRING (14)	
>TIm Revd (C)	M		BIT STRING (2)	
>HO-Word	M		BIT STRING (22)	
>WN	M		BIT STRING (10)	
>C/A or P on L2	M		BIT STRING (2)	
>User Range Accuracy Index	M		BIT STRING (4)	
>SV Health	M		BIT STRING (6)	
>IODC	M		BIT STRING (10)	
>L2 P Data Flag	M		BIT STRING (1)	
>SF 1 Reserved	M		BIT STRING (87)	
>T <sub>GD</sub>	M		BIT STRING (8)	
>t <sub>oc</sub>	M		BIT STRING (16)	
>af <sub>2</sub>	M		BIT STRING (8)	
>af <sub>1</sub>	M		BIT STRING (16)	
>af <sub>0</sub>	M		BIT STRING (22)	
>C <sub>rs</sub>	M		BIT STRING (16)	
>Δn	M		BIT STRING (16)	
>M <sub>0</sub>	M		BIT STRING (32)	
>C <sub>uc</sub>	M		BIT STRING (16)	
>e	M		BIT STRING (32)	
>C <sub>us</sub>	M		BIT STRING (16)	
>(A) <sup>1/2</sup>	M		BIT STRING (32)	
>t <sub>oe</sub>	M		BIT STRING (16)	
>Fit Interval Flag	M		BIT STRING (1)	
>AODO	M		BIT STRING (5)	
>C <sub>ic</sub>	M		BIT STRING (16)	
>OMEGA <sub>0</sub>	M		BIT STRING (32)	
>C <sub>is</sub>	M		BIT STRING (16)	
>i <sub>0</sub>	M		BIT STRING (32)	
>C <sub>rc</sub>	M		BIT STRING (16)	
>ω	M		BIT STRING (32)	
>OMEGAdot	M		BIT STRING (24)	
>ldot	M		BIT STRING (14)	
>Spare/zero fill	M		BIT STRING (20)	

Range Bound	Explanation
maxNoSat	Maximum number of satellites for which information can be provided

### 9.2.1.31C GPS Ionospheric Model

This IE provides the information regarding the GPS Ionospheric Model. For further details on the meaning of parameters, see [27].

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
α <sub>0</sub>	M		BIT STRING (8)	
α <sub>1</sub>	M		BIT STRING (8)	
α <sub>2</sub>	M		BIT STRING (8)	
α <sub>3</sub>	M		BIT STRING (8)	
β <sub>0</sub>	M		BIT STRING (8)	
β <sub>1</sub>	M		BIT STRING (8)	
β <sub>2</sub>	M		BIT STRING (8)	
β <sub>3</sub>	M		BIT STRING (8)	



## 9.2.1.31D GPS UTC Model

This IE provides the information regarding the GPS UTC Model. For further details on the meaning of parameters, see [27].

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
A <sub>1</sub>	M		BIT STRING (24)	
A <sub>0</sub>	M		BIT STRING (32)	
t <sub>ot</sub>	M		BIT STRING (8)	
Δt <sub>LS</sub>	M		BIT STRING (8)	
WN <sub>t</sub>	M		BIT STRING (8)	
WN <sub>LSF</sub>	M		BIT STRING (8)	
DN	M		BIT STRING (8)	
Δt <sub>LSF</sub>	M		BIT STRING (8)	

## 9.2.1.31E GPS Real-Time Integrity

This IE provides the information regarding the status of the GPS constellation. For further details on the meaning of parameters, see [27].

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
CHOICE <i>Bad Satellites Presence</i>	M			
> <i>Bad Satellites</i>				
>> <b>Satellite Information</b>		1..<maxNo Sat>		
>>>BadSatID	M		INTEGER (0..63)	Satellite ID
> <i>No Bad Satellites</i>			NULL	

Range Bound	Explanation
maxNoSat	Maximum number of satellites for which information can be provided

## 9.2.1.31F GPS Almanac

This IE provides the information regarding the GPS Almanac. For further details on the meaning of parameters, see [27].

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
WN <sub>a</sub>	M		BIT STRING (8)	
<b>Satellite Information</b>	M	1..<maxNo OfSatAlmanac>		See Note 1.
>DataID	M		INTEGER (0..3)	
>SatID	M		INTEGER (0..63)	Satellite ID
>e	M		BIT STRING (16)	
>t <sub>oa</sub>	M		BIT STRING (8)	
>δi	M		BIT STRING (16)	
>OMEGADOT	M		BIT STRING (16)	
>SV Health	M		BIT STRING (8)	
>A <sup>1/2</sup>	M		BIT STRING (24)	
>OMEGA <sub>0</sub>	M		BIT STRING (24)	
>M <sub>0</sub>	M		BIT STRING (24)	
>ω	M		BIT STRING (24)	
>af <sub>0</sub>	M		BIT STRING (11)	
>af <sub>1</sub>	M		BIT STRING (11)	
SV Global Health	O		BIT STRING (364)	

Range Bound	Explanation
<i>maxNoOfSatAlmanac</i>	Maximum number of satellite almanacs for which information can be provided

Note 1: This information element is a simplified representation of the ASN.1 description. Repetitions 1 through maxNoSat and repetitions maxNoSat+1 through maxNoOfSatAlmanac are represented by separate ASN.1 structures with different criticality.

### 9.2.1.31G GPS Receiver Geographical Position (GPS RX Pos)

The GPS Receiver Geographical Position is used to identify the geographical coordinates of a GPS receiver relevant for a certain Information Exchange Object.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Latitude Sign	M		ENUMERATED (North, South)	
Degrees of Latitude	M		INTEGER (0..2 <sup>23</sup> -1)	The IE value (N) is derived by this formula: $N \leq 2^{23} \times /90 < N+1$ X being the latitude in degree (0°.. 90°)
Degrees of Longitude	M		INTEGER (-2 <sup>23</sup> ..2 <sup>23</sup> -1)	The IE value (N) is derived by this formula: $N \leq 2^{24} \times /360 < N+1$ X being the longitude in degree (-180°..+180°)
Direction of Altitude	M		ENUMERATED (Height, Depth)	
Altitude	M		INTEGER (0..2 <sup>15</sup> -1)	The relation between the value (N) and the altitude (a) in meters it describes is $N \leq a < N+1$ , except for $N=2^{15}-1$ for which the range is extended to include all greater values of (a).

### 9.2.1.31Ga HSDPA Capability

This parameter defines the HSDPA capability for a Local Cell.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
HSDPA Capability			ENUMERATED (HSDPA Capable, HSDPA non Capable)	

### 9.2.1.31H HS-DSCH Information To Modify

The *HS-DSCH Information To Modify* IE is used for modification of HS-DSCH information in a Node B Communication Context.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
<b>HS-DSCH MAC-d Flow Specific Information</b>		<i>0..&lt;maxno ofMACdFlows&gt;</i>		
>HS-DSCH MAC-d Flow ID	M		9.2.1.31I	
>Allocation/Retention Priority	O		9.2.1.1A	
>Transport Bearer Request Indicator	M		9.2.1.62A	
>Binding ID	O		9.2.1.4	Shall be ignored if bearer establishment with ALCAP.
>Transport Layer Address	O		9.2.1.63	Shall be ignored if bearer establishment with ALCAP.
<b>Priority Queue Information</b>		<i>0..&lt;maxno ofPrioQueues&gt;</i>		
>CHOICE <i>Priority Queue</i>	M			
>>Add <i>Priority Queue</i>				
>>>Priority Queue ID	M		9.2.1.49C	
>>>Associated HS-DSCH MAC-d Flow	M		HS-DSCH MAC-d Flow ID 9.2.1.31I	Shall only refer to an HS-DSCH MAC-d flow already existing in the old configuration. Multiple Priority Queues can be associated with the same HS-DSCH MAC-d Flow ID.
>>>Scheduling Priority Indicator	M		9.2.1.53H	
>>>T1	M		9.2.1.56a	
>>>Discard Timer	O		9.2.1.24E	
>>>MAC-hs Window Size	M		9.2.1.38B	
>>>MAC-hs Guaranteed Bit Rate	O		9.2.1.38Aa	
>>>MAC-d PDU Size Index		<i>1..&lt;maxno ofMACdPDUindexes&gt;</i>		
>>>>SID	M		9.2.1.53I	
>>>>MAC-d PDU Size	M		9.2.1.38A	
>>>>RLC Mode	M		9.2.1.52B	
>>Modify <i>Priority Queue</i>				
>>>Priority Queue ID	M		9.2.1.49C	Shall only refer to a Priority Queue already existing in the old configuration.
>>>Scheduling Priority Indicator	O		9.2.1.53H	
>>>T1	O		9.2.1.56a	
>>>Discard Timer	O		9.2.1.24E	
>>>MAC-hs Window Size	O		9.2.1.38B	
>>>MAC-hs Guaranteed Bit Rate	O		9.2.1.38Aa	
>>>MAC-d PDU Size Index		<i>0..&lt;maxno ofMACdPDUindexes&gt;</i>		
>>>>SID	M		9.2.1.53I	
>>>>MAC-d PDU Size	M		9.2.1.38A	
>>Delete <i>Priority Queue</i>				
>>>Priority Queue ID	M		9.2.1.49C	Shall only refer to a Priority Queue already existing in the old configuration.
MAC-hs Reordering Buffer Size for RLC-UM	O		9.2.1.38Ab	
CQI Feedback Cycle k	O		9.2.2.21B	For FDD only
CQI Repetition Factor	O		9.2.2.4Cb	For FDD only
ACK-NACK Repetition Factor	O		9.2.2.a	For FDD only

CQI Power Offset	O		9.2.2.4Ca	For FDD only
ACK Power Offset	O		9.2.2.b	For FDD only
NACK Power Offset	O		9.2.2.23a	For FDD only
HS-SCCH Power Offset	O		9.2.2.18I	For FDD only
Measurement Power Offset	O		9.2.2.21C	For FDD only
HS-SCCH Code Change Grant	O		9.2.1.31L	
TDD ACK NACK Power Offset	O		9.2.3.18F	For TDD only

Range Bound	Explanation
<i>maxnoofMACdFlows</i>	Maximum number of HS-DSCH MAC-d flows
<i>maxnoofPrioQueues</i>	Maximum number of Priority Queues
<i>maxnoofMACdPDUindexes</i>	Maximum number of different MAC-d PDU SIDs

### 9.2.1.31HA HS-DSCH Information To Modify Unsynchronised

The *HS-DSCH Information To Modify Unsynchronised* IE is used for modification of HS-DSCH information in a Node B Communication Context with the Unsynchronised Radio Link Reconfiguration procedure.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
<b>HS-DSCH MAC-d Flow Specific Information</b>		<i>0..&lt;maxnoofMACdFlows&gt;</i>		
>HS-DSCH MAC-d Flow ID	M		9.2.1.31I	
>Allocation/Retention Priority	O		9.2.1.1A	
>Transport Bearer Request Indicator	M		9.2.1.62A	
>Binding ID	O		9.2.1.4	Shall be ignored if bearer establishment with ALCAP.
>Transport Layer Address	O		9.2.1.63	Shall be ignored if bearer establishment with ALCAP.
<b>Priority Queue Information</b>		<i>0..&lt;maxnoofPrioQueues&gt;</i>		
>Priority Queue ID	M		9.2.1.49C	
>Scheduling Priority Indicator	O		9.2.1.53H	
>Discard Timer	O		9.2.1.24E	
>MAC-hs Guaranteed Bit Rate	O		9.2.1.38Aa	
CQI Power Offset	O		9.2.2.4Ca	For FDD only
ACK Power Offset	O		9.2.2.b	For FDD only
NACK Power Offset	O		9.2.2.23a	For FDD only
HS-SCCH Power Offset	O		9.2.2.18I	For FDD only
TDD ACK NACK Power Offset	O		9.2.3.18F	For TDD only

Range Bound	Explanation
<i>maxnoofMACdFlows</i>	Maximum number of HS-DSCH MAC-d flows
<i>maxnoofPrioQueues</i>	Maximum number of Priority Queues

### 9.2.1.31Ha HS-DSCH Initial Capacity Allocation

The *HS-DSCH Initial Capacity Allocation* IE provides flow control information for each scheduling priority class for the HS-DSCH FP over Iub.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
<b>HS-DSCH Initial Capacity Allocation</b>		<i>1..&lt;maxno ofPrioQueues&gt;</i>		
>Scheduling Priority Indicator	M		9.2.1.53H	
>Maximum MAC-d PDU Size	M		MAC-d PDU Size 9.2.1.38A	
>HS-DSCH Initial Window Size	M		9.2.1.31Hb	

Range Bound	Explanation
<i>maxnoofPrioQueues</i>	Maximum number of Priority Queues

### 9.2.1.31Hb HS-DSCH Initial Window Size

Indicates the initial number of MAC-d PDUs that may be transmitted before new credits are received from the Node B.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
HS-DSCH Initial Window Size			INTEGER (1..255)	Number of MAC-d PDUs

### 9.2.1.31I HS-DSCH MAC-d Flow ID

HS-DSCH MAC-d Flow ID is the unique identifier for one MAC-d flow.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
HS-DSCH MAC-d Flow ID			INTEGER (0..7)	

### 9.2.1.31IA HS-DSCH MAC-d Flows Information

The *HS-DSCH MAC-d Flows Information* IE is used for the establishment of HS-DSCH MAC-d flows for a Node B Communication Context.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
<b>HS-DSCH MAC-d Flow Specific Information</b>		<i>1..&lt;maxno ofMACdFlows&gt;</i>		
>HS-DSCH MAC-d Flow ID	M		9.2.1.31I	
>Allocation/Retention Priority	M		9.2.1.1A	
>Binding ID	O		9.2.1.4	Shall be ignored if bearer establishment with ALCAP.
>Transport Layer Address	O		9.2.1.63	Shall be ignored if bearer establishment with ALCAP.
<b>Priority Queue Information</b>		<i>1..&lt;maxno ofPrioQueues&gt;</i>		
>Priority Queue ID	M		9.2.1.49C	
>Associated HS-DSCH MAC-d Flow	M		HS-DSCH MAC-d Flow ID 9.2.1.31I	The HS-DSCH MAC-d Flow ID shall be one of the flow IDs defined in the HS-DSCH MAC-d Flow Specific Information of this IE. Multiple Priority Queues can be associated with the same HS-DSCH MAC-d Flow ID.
>Scheduling Priority Indicator	M		9.2.1.53H	
>T1	M		9.2.1.56a	
>Discard Timer	O			
>MAC-hs Window Size	M		9.2.1.38B	
>MAC-hs Guaranteed Bit Rate	O		9.2.1.38Aa	
<b>&gt;MAC-d PDU Size Index</b>		<i>1..&lt;maxno ofMACdPDUindexes&gt;</i>		
>>SID	M		9.2.1.53I	
>>MAC-d PDU Size	M		9.2.1.38A	
>RLC Mode	M		9.2.1.52B	

Range Bound	Explanation
<i>maxnoofMACdFlows</i>	Maximum number of HS-DSCH MAC-d flows
<i>maxnoofPrioQueues</i>	Maximum number of Priority Queues
<i>maxnoofMACdPDUindexes</i>	Maximum number of different MAC-d PDU SIDs

### 9.2.1.31IB HS-DSCH MAC-d Flows To Delete

The *HS-DSCH MAC-d Flows To Delete* IE is used for the removal of HS-DSCH MAC-d flows from a Node B Communication Context.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
<b>HS-DSCH MAC-d Flows To Delete</b>		<i>1..&lt;maxno ofMACdFlows&gt;</i>		
>HS-DSCH MAC-d Flow ID	M		9.2.1.31I	

Range Bound	Explanation
<i>maxnoofMACdFlows</i>	Maximum number of HS-DSCH MAC-d flows

### 9.2.1.31Ia HS-DSCH Physical Layer Category

The *HS-DSCH Physical Layer Category* IE defines a set of UE radio access capabilities related to HSDPA, as defined in [33].

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
HS-DSCH Physical Layer Category			INTEGER (1..64,...)	

### 9.2.1.311aa HS-DSCH Provided Bit Rate Value

The *HS-DSCH Provided Bit Rate Value* IE indicates the HS-DSCH Provided Bit Rate as defined in [32].

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
HS-DSCH Provided Bit Rate Value			INTEGER (0..2 <sup>24</sup> -1, ...)	Expressed in bit/s.

### 9.2.1.311b HS-DSCH Provided Bit Rate Value Information

The *HS-DSCH Provided Bit Rate Value Information* IE reports the *HS-DSCH Provided Bit Rate Value* IE for each priority class.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
<b>HS-DSCH Provided Bit Rate Value Information</b>		1..<maxNo ofPriorityClasses>		
>Scheduling Priority Indicator	M		9.2.1.53H	
>HS-DSCH Provided Bit Rate Value	M		9.2.1.311aa	

Range Bound	Explanation
<i>maxNoofPriorityClasses</i>	Maximum number of HS-DSCH Scheduling Priorities

### 9.2.1.311ba HS-DSCH Required Power Value

The *HS-DSCH Required Power Value* IE indicates the minimum necessary power for a given priority class to meet the Guaranteed Bit Rate for all the established HS-DSCH connections belonging to this priority class.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
HS-DSCH Required Power Value			INTEGER (0..1000)	Expressed in thousandths of the max transmission power

### 9.2.1.311c HS-DSCH Required Power Value Information

The *HS-DSCH Required Power Value Information* IE reports the *HS-DSCH Required Power Value* IE for each priority class. For each priority class, a list of UEs, identified by the *CRNC Communication Context* IEs, requiring a particularly high amount of power to meet the Guaranteed Bit Rate for their established HS-DSCH connections may be included. Additionally, the *HS-DSCH Required Power Per UE Weight* IE may be included for each of those UEs.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
<b>HS-DSCH Required Power Value Information</b>		<i>1..&lt;maxNo ofPriorityClasses&gt;</i>		
>Scheduling Priority Indicator	M		9.2.1.53H	
>HS-DSCH Required Power Value	M		9.2.1.31Iba	
<b>&gt;HS-DSCH Required Power Per UE Information</b>		<i>0..&lt;maxNo ofContextsonUeList&gt;</i>		List of UEs with Guaranteed Bit Rate indicating their required power consumption relative to the HS-DSCH Required Power Value.
>>CRNC Communication Context ID	M		9.2.1.18	The reserved value "All CRNCCC" shall not be used.
>>HS-DSCH Required Power Per UE Weight	O		INTEGER (0..100)	Expressed in percentage of the value provided in the <i>HS-DSCH Required Power Value</i> IE

Range Bound	Explanation
<i>maxNoofContextsonUeList</i>	Maximum number of Communication Contexts to include in the list of UEs
<i>maxNoofPriorityClasses</i>	Maximum number of HS-DSCH Scheduling Priorities

### 9.2.1.31J HS-DSCH RNTI

The HS-DSCH RNTI is used for the UE-specific CRC in HS-SCCH and HS-DSCH.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
HS-DSCH RNTI			INTEGER (0..65535)	

### 9.2.1.31K HS-SCCH Code Change Indicator

The HS-SCCH Code Change Indicator indicates whether the HS-SCCH Code change is needed or not.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
HS-SCCH Code Change Indicator			ENUMERATED (HS-SCCH Code Change needed)	

### 9.2.1.31L HS-SCCH Code Change Grant

The *HS-SCCH Code Change Grant* IE indicates that modification of HS-SCCH Codes is granted.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
HS-SCCH Code Change Grant			ENUMERATED (Change Granted)	

### 9.2.1.32 IB\_SG\_DATA

Segment as defined in ref. [18].



IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
IB_SG_DATA			BIT STRING	Contains "SIB data fixed" or "SIB data variable" in segment as encoded in ref. [18].

### 9.2.1.33 IB\_SG\_POS

The lowest position of a specific Information Block segment in the SFN cycle ( $IB\_SG\_POS < IB\_SG\_REP$ ).

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
IB_SG_POS			INTEGER (0..4094)	Only even positions are allowed. See ref. [18]

### 9.2.1.34 IB\_SG\_REP

Repetition distance for an Information Block segment. The segment shall be transmitted when  $SFN \bmod IB\_SG\_REP = IB\_SG\_POS$ .

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
IB_SG_REP			ENUMERATED (4, 8, 16, 32, 64, 128, 256, 512, 1024, 2048, 4096)	Repetition period for the IB segment in frames

### 9.2.1.35 IB Type

The IB Type identifies a specific system information block.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
IB Type			ENUMERATED ( MIB, SB1, SB2, SIB1, SIB2, SIB3, SIB4, SIB5, SIB6, SIB7, SIB8, SIB9, SIB10, SIB11, SIB12, SIB13, SIB13.1, SIB13.2, SIB13.3, SIB13.4, SIB14, SIB15, SIB15.1, SIB15.2, SIB15.3, SIB16, ..., SIB17, SIB15.4, SIB18, SIB15.5)	

### 9.2.1.36 Indication Type

Void.

### 9.2.1.36A Information Exchange Object Type

Void.

### 9.2.1.36B Information Report Characteristics

The information report characteristics defines how the reporting shall be performed.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
CHOICE <i>Information Report Characteristics Type</i>	M			
> <i>On Demand</i>			NULL	
> <i>Periodic</i>				
>>CHOICE <i>Information Report Periodicity Scale</i>	M			The frequency with which the Node B shall send information reports.
>>> <i>minute</i>				
>>>>Report Periodicity Value	M		INTEGER (1..60,...)	Unit: min
>>> <i>hour</i>				
>>>>Report Periodicity Value	M		INTEGER (1..24,...)	Unit: h
> <i>On Modification</i>				
>>Information Threshold	O		9.2.1.36E	

### 9.2.1.36C Information Exchange ID

The Information Exchange ID uniquely identifies any requested information per Node B.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Information Exchange ID	M		INTEGER (0..2 <sup>20</sup> -1)	

### 9.2.1.36D Information Type

The Information Type indicates which kind of information the Node B shall provide.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Information Type Item	M		ENUMERATED ( GPS Information, DGPS Corrections, GPS RX Pos, ...)	
<b>GPS Information</b>	C-GPS	0..<maxNoGPSItems >		
>GPS Information Item			ENUMERATED ( GPS Navigation Model & Time Recovery, GPS Ionospheric Model, GPS UTC Model, GPS Almanac, GPS Real-Time Integrity, ...)	

Condition	Explanation
GPS	The IE shall be present if the <i>Information Type Item</i> IE indicates "GPS Information".

Range Bound	Explanation
<i>maxNoGPSItems</i>	Maximum number of GPS Information Items supported in one Information Exchange

## 9.2.1.36E Information Threshold

The Information Threshold indicates which kind of information shall trigger the Information Reporting procedure.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
CHOICE <i>Information Type Item</i>	M			
>DGPS				
>>PRC Deviation	M		ENUMERATED (1, 2, 5, 10, ...)	PRC deviation in meters from the previously reported value, which shall trigger a report

## 9.2.1.36F IPDL Indicator

Indicates if IPDL periods shall be active or not.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
IPDL Indicator			ENUMERATED (active, inactive)	

## 9.2.1.37 Limited Power Increase

Void.

## 9.2.1.37A Local Cell Group ID

The Local Cell Group ID represents resources in the Node B, which have been pooled from a capacity point of view.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Local Cell Group ID			Local Cell ID 9.2.1.38	

## 9.2.1.38 Local Cell ID

The local cell ID represents resources in the Node B that can be used for the configuration of a cell.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Local Cell ID			INTEGER (0...268435455)	

## 9.2.1.38A MAC-d PDU Size

The *MAC-d PDU Size* provides the size in bits of the MAC-d PDU.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
MAC-d PDU Size			INTEGER (1..5000,...)	

### 9.2.1.38aa MAC-es Guaranteed Bit Rate

The *MAC-es Guaranteed Bit Rate* IE indicates the guaranteed number of bits per second to be delivered over the air interface under normal operating conditions (provided there is data to deliver) for which the Node B shall provide sufficient UL resources.

<u>IE/Group Name</u>	<u>Presence</u>	<u>Range</u>	<u>IE type and reference</u>	<u>Semantics description</u>
<a href="#">MAC-es Guaranteed Bit Rate</a>			<a href="#">INTEGER (0..2<sup>24</sup>-1, ...)</a>	<a href="#">Unit: bit/s</a>

### 9.2.1.38Aa MAC-hs Guaranteed Bit Rate

The *MAC-hs Guaranteed Bit Rate* IE indicates the guaranteed number of bits per second that Node B should deliver over the air interface under normal operating conditions (provided there is data to deliver).

<b>IE/Group Name</b>	<b>Presence</b>	<b>Range</b>	<b>IE Type and Reference</b>	<b>Semantics Description</b>
MAC-hs Guaranteed Bit Rate			INTEGER (0..2 <sup>24</sup> -1, ...)	Unit: bit/s

### 9.2.1.38Ab MAC-hs Reordering Buffer Size for RLC-UM

The *MAC-hs Reordering Buffer Size for RLC-UM* IE indicates the portion of the buffer in the UE that can be used for RLC-UM traffic (i.e. for Priority Queues whose *RLC Mode* IE is set to "RLC-UM").

<b>IE/Group Name</b>	<b>Presence</b>	<b>Range</b>	<b>IE Type and Reference</b>	<b>Semantics Description</b>
MAC-hs Reordering Buffer Size			INTEGER (0..300,...)	Unit: kBytes And N kBytes = N*1024 Bytes. The Node B shall use this value to avoid the overflow of the MAC-hs reordering buffer.

### 9.2.1.38B MAC-hs Window Size

The *MAC-hs Window Size* IE is used for MAC-hs PDU retransmission as defined in [32].

<b>IE/Group Name</b>	<b>Presence</b>	<b>Range</b>	<b>IE Type and Reference</b>	<b>Semantics Description</b>
MAC-hs Window Size			ENUMERATED (4, 6, 8, 12, 16, 24, 32,...)	

### 9.2.1.39 Maximum DL Power Capability

This parameter indicates the maximum DL power capability for a local cell or a Power Local Cell Group within the Node B. The reference point is the antenna connector. If Transmit Diversity can be used in the local cell, the parameter indicates the maximum for the linear sum of the power that can be used on all branches.

<b>IE/Group Name</b>	<b>Presence</b>	<b>Range</b>	<b>IE Type and Reference</b>	<b>Semantics Description</b>
Maximum DL Power Capability			INTEGER (0..500)	Unit: dBm Range: 0..50 dBm Step: 0.1 dB

**9.2.1.39a Maximum Number Of Transmissions For E-DCH**

The Maximum Number Of Transmissions For E-DCH IE specifies the upper boundary for retransmissions for a single MAC-d flow.

<u>IE/Group Name</u>	<u>Presence</u>	<u>Range</u>	<u>IE Type and Reference</u>	<u>Semantics Description</u>
Maximum Number Of Transmissions For E-DCH			INTEGER (0..15)	

**9.2.1.40 Maximum Transmission Power**

The Maximum Transmission Power is the maximum value for the linear sum of the power of all downlink physical channels, that is allowed to be used in a cell. If Transmit Diversity is applied to one downlink physical channel, the power to be considered for this downlink physical channel is the linear sum of the power used for this downlink physical channel on all branches. The reference point is the antenna connector.

<b>IE/Group Name</b>	<b>Presence</b>	<b>Range</b>	<b>IE Type and Reference</b>	<b>Semantics Description</b>
Maximum Transmission Power			INTEGER (0..500)	Unit: dBm Range: 0..50 Step: 0.1 dB

**9.2.1.40A Measurement Availability Indicator**

Void.

**9.2.1.40B Measurement Change Time**

<b>IE/Group Name</b>	<b>Presence</b>	<b>Range</b>	<b>IE Type and Reference</b>	<b>Semantics Description</b>
CHOICE <i>Time Scale</i> > <i>millisecond</i>	M			
>>Measurement Change Time Value	M		INTEGER (1..6000,...)	Unit: ms Range: 10..60000 ms Step: 10 ms

**9.2.1.41 Measurement Filter Coefficient**

The Measurement Filter Coefficient determines the amount of filtering to be applied for measurements.

<b>IE/Group Name</b>	<b>Presence</b>	<b>Range</b>	<b>IE Type and Reference</b>	<b>Semantics Description</b>
Measurement Filter Coefficient			ENUMERATED (0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 11, 13, 15, 17, 19,...)	

**9.2.1.41A Measurement Hysteresis Time**

The Measurement Hysteresis Time provides the duration during which a reporting criterion has to be fulfilled for the Measurement Reporting procedure to be triggered.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
CHOICE <i>Time Scale</i>	M			
> <i>millisecond</i>				
>>Measurement Hysteresis Time Value	M		INTEGER (1..6000,...)	Unit: ms Range: 10..60000 ms Step: 10 ms

#### 9.2.1.42 Measurement ID

The Measurement ID uniquely identifies any measurement per (Node B or Communication) Control Port.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Measurement ID			INTEGER (0..2 <sup>20</sup> -1)	

#### 9.2.1.43 Measurement Increase/Decrease Threshold

The Measurement Increase/Decrease Threshold defines the threshold that shall trigger Event C or D.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
CHOICE <i>Measurement Increase/Decrease Threshold</i>	M				–	
> <i>Received Total Wide Band Power</i>					–	
>> <i>Received Total Wide Band Power</i>	M		INTEGER (0..620)	Unit: dB Range: 0..62 dB Step: 0.1 dB	–	
> <i>Transmitted Carrier Power</i>					–	
>> <i>Transmitted Carrier Power</i>	M		INTEGER (0..100)	According to mapping in [22] and [23]	–	
> <i>Acknowledged PRACH Preambles</i>				FDD only	–	
>> <i>Acknowledged PRACH Preambles</i>	M		INTEGER (0..240,...)	According to mapping in [22]	–	
> <i>UL Timeslot ISCP</i>				TDD only	–	
>> <i>UL Timeslot ISCP</i>	M		INTEGER (0..126)	Unit: dB Range: 0..63 dB Step: 0.5 dB	–	
> <i>SIR</i>					–	
>> <i>SIR</i>	M		INTEGER (0..62)	Unit: dB Range: 0..31 dB Step: 0.5 dB	–	
> <i>SIR Error</i>				FDD only	–	
>> <i>SIR Error</i>	M		INTEGER (0..124)	Unit: dB Range: 0..62 dB Step: 0.5 dB	–	
> <i>Transmitted Code Power</i>					–	
>> <i>Transmitted Code Power</i>	M		INTEGER (0..112,...)	Unit: dB Range: 0..56 dB Step: 0.5 dB	–	
> <i>RSCP</i>				TDD only	–	
>> <i>RSCP</i>	M		INTEGER (0..126)	Unit: dB Range: 0..63 dB Step: 0.5 dB	–	
> <i>Round Trip Time</i>				FDD only	–	
>> <i>Round Trip Time</i>	M		INTEGER (0..32766)	Unit: chips Range: 0 .. 2047.875 chips Step: 0.625 chips	–	
> <i>Acknowledged PCPCH Access Preambles</i>				FDD only	–	
>> <i>Acknowledged PCPCH Access Preambles</i>	M		INTEGER (0..15,...)	According to mapping in [22]	–	
> <i>Detected PCPCH Access Preambles</i>				FDD only	–	
>> <i>Detected PCPCH Access Preambles</i>	M		INTEGER (0..240,...)	According to mapping in [22]	–	
> <i>Additional Measurement Thresholds</i>					–	
>> <i>Transmitted Carrier Power Of All Codes Not Used For HS-PDSCH Or HS-SCCH Transmission</i>					–	
>>> <i>Transmitted Carrier Power Of</i>	M		INTEGER (0..100)	According to mapping in [22] and [23]	YES	reject



All Codes Not Used For HS-PDSCH Or HS-SCCH Transmission						
>>Transmitted Carrier Power For Cell Portion				FDD only	–	
>>>Transmitted Carrier Power For Cell Portion	M		INTEGER (0..100)	Mapping identical to the one for Transmitted Carrier Power measurement in [22]	YES	reject
>>Received Total Wide Band Power For Cell Portion				FDD only	–	
>>>Received Total Wide Band Power For Cell Portion	M		INTEGER (0..620)	Unit: dB Range: 0..62 dB Step: 0.1 dB	YES	reject
>>Transmitted Carrier Power Of All Codes Not Used For HS-PDSCH Or HS-SCCH Transmission For Cell Portion				FDD only	–	
>>>Transmitted Carrier Power Of All Codes Not Used For HS-PDSCH Or HS-SCCH Transmission For Cell Portion	M		INTEGER (0..100)	Mapping identical to the one for Transmitted Carrier Power Of All Codes Not Used For HS-PDSCH Or HS-SCCH Transmission measurement in [22]	YES	reject
>>UpPTS interference				1.28Mcps TDD Only	–	
>>>UpPTS interference Value	M		INTEGER (0..127,...)	According to mapping in [23]	YES	reject

### 9.2.1.43A Measurement Recovery Behavior

This IE controls the Measurement Recovery Behavior.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Measurement Recovery Behavior			NULL	

### 9.2.1.43B Measurement Recovery Reporting Indicator

This IE indicates the Measurement Recovery Reporting.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Measurement Recovery Reporting Indicator			NULL	

### 9.2.1.43C Measurement Recovery Support Indicator

This IE indicates the Measurement Recovery Support.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Measurement Recovery Support Indicator			NULL	

#### 9.2.1.44 Measurement Threshold

The Measurement Threshold defines which threshold that shall trigger Event A, B, E, F or On Modification.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
CHOICE <i>Measurement Threshold</i>	M				–	
> <i>Received Total Wide Band Power</i>					–	
>> <i>Received Total Wide Band Power</i>	M		INTEGER (0..621)	According to mapping in [22] and [23]	–	
> <i>Transmitted Carrier Power</i>					–	
>> <i>Transmitted Carrier Power</i>	M		INTEGER (0..100)	According to mapping in [22] and [23]	–	
> <i>Acknowledged PRACH Preambles</i>				FDD only	–	
>> <i>Acknowledged PRACH Preambles</i>	M		INTEGER (0..240,...)	According to mapping in [22]	–	
> <i>UL Timeslot ISCP</i>				TDD only	–	
>> <i>UL Timeslot ISCP</i>	M		INTEGER (0..127)	According to mapping in [23]	–	
> <i>SIR</i>					–	
>> <i>SIR</i>	M		INTEGER (0..63)	According to mapping in [22] and [23]	–	
> <i>SIR Error</i>				FDD only	–	
>> <i>SIR Error</i>	M		INTEGER (0..125)	According to mapping in [22]	–	
> <i>Transmitted Code Power</i>					–	
>> <i>Transmitted Code Power</i>	M		INTEGER (0..127)	According to mapping in [22] and [23]	–	
> <i>RSCP</i>				TDD only	–	
>> <i>RSCP</i>	M		INTEGER (0..127)	According to mapping in [23]	–	
> <i>Rx Timing Deviation</i>				Applicable to 3.84Mcps TDD only	–	
>> <i>Rx Timing Deviation</i>	M		INTEGER (0..8191)	According to mapping in [23]	–	
> <i>Round Trip Time</i>				FDD only	–	
>> <i>Round Trip Time</i>	M		INTEGER (0..32767)	According to mapping in [22]	–	
> <i>Acknowledged PCPCH Access Preambles</i>				FDD only	–	
>> <i>Acknowledged PCPCH Access Preambles</i>	M		INTEGER (0..15,...)	According to mapping in [22]	–	
> <i>Detected PCPCH Access Preambles</i>				FDD only	–	
>> <i>Detected PCPCH Access Preambles</i>	M		INTEGER (0..240,...)	According to mapping in [22]	–	
> <i>Additional Measurement Thresholds</i>					–	
>> <i>UTRAN GPS Timing Of Cell Frames For UE Positioning</i>					–	
>>> <i>T<sub>UTRAN-GPS</sub> Measurement Threshold Information</i>	M		9.2.1.64B		YES	reject
>> <i>SFN-SFN Observed Time Difference</i>					–	
>>> <i>SFN-SFN Measurement</i>	M		9.2.1.53C		YES	reject

Threshold Information						
>>Rx Timing Deviation LCR				Applicable to 1.28Mcps TDD Only	–	
>>>Rx Timing Deviation LCR	M		INTEGER (0..511)	According to mapping in [23]	YES	reject
>>HS-SICH Reception Quality				Applicable to TDD Only	–	
>>>HS-SICH Reception Quality	M		INTEGER (0..20)	According to mapping in [23]	YES	reject
>>Transmitted Carrier Power Of All Codes Not Used For HS-PDSCH Or HS-SCCH Transmission					–	
>>>Transmitted Carrier Power Of All Codes Not Used For HS-PDSCH Or HS-SCCH Transmission	M		INTEGER (0..100)	According to mapping in [22] and [23]	YES	reject
>>HS-DSCH Required Power					–	
>>>HS-DSCH Required Power Value	M		9.2.1.31Iba		YES	reject
>>Transmitted Carrier Power For Cell Portion				FDD only	–	
>>>Transmitted Carrier Power For Cell Portion	M		INTEGER (0..100)	Mapping identical to the one for Transmitted Carrier Power measurement in [22]	YES	reject
>>Received Total Wide Band Power For Cell Portion				FDD only	–	
>>>Received Total Wide Band Power For Cell Portion	M		INTEGER (0..621)	Mapping identical to the one for Received Total Wide Band Power measurement in [22]	YES	reject
>>Transmitted Carrier Power Of All Codes Not Used For HS-PDSCH Or HS-SCCH Transmission For Cell Portion				FDD only	–	
>>> Transmitted Carrier Power Of All Codes Not Used For HS-PDSCH Or HS-SCCH Transmission Value For Cell Portion	M		INTEGER (0..100)	Mapping identical to the one for Transmitted Carrier Power Of All Codes Not Used For HS-PDSCH Or HS-SCCH Transmission measurement in [22]	YES	reject
>>UpPTS interference				1.28Mcps TDD Only	–	
>>>UpPTS interference Value	M		INTEGER (0..127,...)	According to mapping in [23]	YES	reject

### 9.2.1.45 Message Discriminator

This field is used to discriminate between Dedicated NBAP and Common NBAP messages.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Message Discriminator			ENUMERATED (Common, Dedicated)	

### 9.2.1.45A Message Structure

The *Message Structure* IE gives information for each level with assigned criticality in an hierarchical message structure from top level down to the lowest level above the reported level for the occurred error (reported in the *Information Element Criticality Diagnostics* IE).

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
<b>Message Structure</b>		1..<maxnooflevels>		The first repetition of the <i>Message Structure</i> IE corresponds to the top level of the message. The last repetition of the <i>Message Structure</i> IE corresponds to the level above the reported level for the occurred error of the message.
>IE ID	M		INTEGER (0..65535)	The IE ID of this level's IE containing the not understood or missing IE.
>Repetition Number	O		INTEGER (1..256)	The <i>Repetition Number</i> IE gives, if applicable, the number of occurrences of this level's reported IE up to and including the occurrence containing the not understood or missing IE.  Note: All the counted occurrences of the reported IE must have the same topdown hierarchical message structure of IEs with assigned criticality above them.

Range Bound	Explanation
maxnooflevels	Maximum number of message levels to report. The value for maxnooflevels is 256.

### 9.2.1.46 Message Type

The Message Type uniquely identifies the message being sent.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
<b>Procedure ID</b>	M	1		
>Procedure Code	M		INTEGER (0..255)	"0" = Audit "1" = Audit Required "2" = Block Resource "3" = Cell Deletion "4" = Cell Reconfiguration "5" = Cell Setup "6" = Common Measurement Failure "7" = Common Measurement Initiation "8" = Common Measurement Report "9" = Common Measurement Termination "10" = Common Transport Channel Delete "11" = Common Transport Channel Reconfigure "12" = Common Transport Channel Setup "13" = Reset "14" = Compressed Mode Command "16" = Dedicated Measurement Failure "17" = Dedicated Measurement Initiation "18" = Dedicated Measurement Report "19" = Dedicated Measurement Termination "20" = Downlink Power Control "21" = Error Indication (For Dedicated Procedures) "23" = Radio Link Addition "24" = Radio Link Deletion "25" = Radio Link Failure "26" = Radio Link Restoration "27" = Radio Link Setup "28" = Resource Status Indication "29" = Synchronised Radio Link Reconfiguration Cancellation "30" = Synchronised Radio Link Reconfiguration Commit "31" = Synchronised Radio Link Reconfiguration Preparation "32" = System Information Update "33" = Unblock Resource "34" = Unsynchronised Radio Link Reconfiguration "35" = Error Indication (For Common Procedures) "37" = Physical Shared Channel Reconfiguration "38" = Downlink Power Timeslot Control "39" = Radio Link Preemption "40" = Information Exchange Failure "41" = Information Exchange Initiation "42" = Information Exchange Termination "43" = Information Reporting "44" = Cell Synchronisation Adjustment "45" = Cell Synchronisation Initiation "46" = Cell Synchronisation Reconfiguration "47" = Cell Synchronisation Reporting "48" = Cell Synchronisation Termination "49" = Cell Synchronisation Failure "50" = Bearer Rearrangement "51" = Radio Link Activation "52" = Radio Link Parameter Update
>Ddmode	M		ENUMERATED (TDD, FDD, Common, ...)	Common = common to FDD and TDD.
Type of Message	M		ENUMERATED (Initiating	

			Message, Successful Outcome, Unsuccessful Outcome, Outcome)	
--	--	--	--	--

### 9.2.1.46A Minimum DL Power Capability

This parameter indicates the minimum DL power capability for a local cell within the Node B. The reference point is the antenna connector. If Transmit Diversity can be used in the local cell, the parameter indicates the minimum for the linear sum of the power that can be used on all branches.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Minimum DL Power Capability			INTEGER (0..800)	Unit: dBm Range: -30 .. +50 dBm Step: 0.1 dB

### 9.2.1.47 Minimum Spreading Factor

This parameter indicates the minimum spreading factor supported at a cell within the Node B.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Minimum Spreading Factor			ENUMERATED (4, 8, 16, 32, 64, 128, 256, 512)	[TDD – Mapping scheme for the minimum spreading factor 1 and 2: "256" means 1 "512" means 2]

### 9.2.1.47A N\_INSYNC\_IND

This parameter is used by the Node B for achievement/re-achievement of UL synchronisation on the Uu interface as defined in ref. [10] and [21].

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
N_INSYNC_IND			INTEGER (1..256)	

### 9.2.1.47B N\_OUTSYNC\_IND

This parameter defines the number of consecutive out-of-sync indications after which the timer T\_RLFAILURE shall be started (see also ref. [10] and [21]).

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
N_OUTSYNC_IND			INTEGER (1..256)	

### 9.2.1.47C Neighbouring FDD Cell Measurement Information

This IE provides information on the FDD neighbouring cells used for the purpose of measurements.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
UC-Id	M		9.2.1.65B	
UARFCN	M		9.2.1.65	Corresponds to Nd [14]
Primary Scrambling Code	M		9.2.2.34	

### 9.2.1.47D Neighbouring TDD Cell Measurement Information

This IE provides information on the 3.84Mcps TDD neighbouring cells used for the purpose of measurements. Since the measurement can be performed on every time slot and midamble shift, the *Time Slot* IE and *Midamble Shift And Burst Type* IE shall be included if available.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
UC-Id	M		9.2.1.65B	
UARFCN	M		9.2.1.65	Corresponds to Nt [15]
Cell Parameter ID	M		9.2.3.4	
Time Slot	O		9.2.3.23	
Midamble Shift And Burst Type	O		9.2.3.7	

### 9.2.1.47E Neighbouring TDD Cell Measurement Information LCR

This IE provides information on the neighbouring 1.28Mcps TDD cells used for the purpose of measurements. Since the measurement can be performed on every time slot and midamble shift, the *Time Slot LCR* IE and *Midamble Shift LCR* IE shall be included if available.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
UC-Id	M		9.2.1.65B	
UARFCN	M		9.2.1.65	Corresponds to Nt [15]
Cell Parameter ID	M		9.2.3.4	
Time Slot LCR	O		9.2.3.24A	
Midamble Shift LCR	O		9.2.3.7A	

### 9.2.1.48 Node B Communication Context ID

The Node B Communication Context ID is the identifier of the Communication Context in the Node B, it corresponds to the dedicated resources which are necessary for an UE using one or more dedicated channels in a given Node B.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Node B Communication Context ID			INTEGER (0..2 <sup>20</sup> -1)	"2 <sup>20</sup> -1" is a reserved value indicating all the existing and future Node B Communication Contexts that can be reached by the Communication Control Port (All NBCC).

### 9.2.1.49 Payload CRC Presence Indicator

This parameter indicates whether FP payload 16 bit CRC is used or not.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Payload CRC Presence Indicator			ENUMERATED (CRC Included, CRC Not Included, ...)	



## 9.2.1.49A PICH Power

The *PICH Power* IE indicates a power level relative to the [FDD - Primary CPICH power] [TDD - Primary CCPCH power] configured in a cell. If Transmit Diversity is applied to the PICH, the *PICH Power* IE indicates the power offset between the linear sum of the power for the PICH on all branches and the [FDD - Primary CPICH power] [TDD - Primary CCPCH power] configured in a cell.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
PICH Power			INTEGER (-10..+5)	Unit: dB Range: -10 .. +5 dB Step: 1dB

## 9.2.1.49B Power Local Cell Group ID

The Power Local Cell Group ID represents resources in the Node B which have been pooled from a DL power capability point of view.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Power Local Cell Group ID			Local Cell ID 9.2.1.38	

## 9.2.1.49C Priority Queue ID

The Priority Queue ID provides the identity of the Priority Queue. The Priority Queue ID is unique across all MAC-d flows that are currently allocated for one Node B Communication Context.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Priority Queue ID			INTEGER (0..7)	

## 9.2.1.49D Process Memory Size

The *Process Memory Size* IE is the size of an HARQ process in the Node B expressed in bits. It provides the maximum number of soft channel bits in the virtual IR buffer [8] or [34].

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Process Memory Size			ENUMERATED ( 800, 1600, 2400, 3200, 4000, 4800, 5600, 6400, 7200, 8000, 8800, 9600, 10400, 11200, 12000, 12800, 13600, 14400, 15200, 16000, 17600, 19200, 20800, 22400, 24000, 25600, 27200, 28800, 30400, 32000, 36000, 40000, 44000, 48000, 52000, 56000, 60000, 64000, 68000, 72000, 76000, 80000, 88000, 96000, 104000, 112000, 120000, 128000, 136000, 144000, 152000, 160000, 176000, 192000, 208000, 224000, 240000, 256000, 272000, 288000, 304000,...)	

### 9.2.1.50 Puncture Limit

The Puncture Limit limits the amount of puncturing that can be applied in order to minimise the number of dedicated physical channels.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Puncture Limit			INTEGER (0..15)	Unit: % Range: 40..100 % Step: 4 % 100% means no puncturing

### 9.2.1.50A QE-Selector

The QE-Selector indicates from which source the value for the quality estimate (QE) shall be taken.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
QE-Selector			ENUMERATED ( Selected, Non-Selected)	

### 9.2.1.51 Report Characteristics

The report characteristics define how the reporting shall be performed.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
CHOICE <i>Report Characteristics</i>	M				–	
> <i>On Demand</i>			NULL		–	
> <i>Periodic</i>					–	
>>Report Periodicity	M		9.2.1.51a	The frequency with which the Node B shall send measurement reports.	–	
> <i>Event A</i>					–	
>>Measurement Threshold	M		9.2.1.44	The threshold for which the Node B shall trigger a measurement report.	–	
>>Measurement Hysteresis Time	O		9.2.1.41A		–	
> <i>Event B</i>					–	
>>Measurement Threshold	M		9.2.1.44	The threshold for which the Node B shall trigger a measurement report.	–	
>>Measurement Hysteresis Time	O		9.2.1.41A		–	
> <i>Event C</i>					–	
>>Measurement Increase/Decrease Threshold	M		9.2.1.43		–	
>>Measurement Change Time	M		9.2.1.40B	The time the measurement entity shall rise on (in ms), in order to trigger a measurement report.	–	
> <i>Event D</i>					–	
>>Measurement Increase/Decrease Threshold	M		9.2.1.43		–	
>>Measurement Change Time	M		9.2.1.40B	The time the measurement entity shall fall (in ms), in order to trigger a measurement report.	–	
> <i>Event E</i>					–	
>>Measurement Threshold 1	M		Measurement Threshold 9.2.1.44		–	
>>Measurement Threshold 2	O		Measurement Threshold 9.2.1.44		–	
>>Measurement Hysteresis Time	O		9.2.1.41A		–	
>>Report Periodicity	O		9.2.1.51a	The frequency with which the Node B shall send measurement reports.	–	
> <i>Event F</i>					–	
>>Measurement Threshold 1	M		Measurement Threshold 9.2.1.44		–	
>>Measurement Threshold 2	O		Measurement Threshold 9.2.1.44		–	
>>Measurement Hysteresis Time	O		9.2.1.41A		–	
>>Report Periodicity	O		9.2.1.51a	The frequency with which the Node B shall send	–	

				measurement reports.		
>Additional Report Characteristics					–	
>>On Modification					–	
>>>On Modification		1			YES	reject
>>>>Measurement Threshold	M		9.2.1.44		–	

### 9.2.1.51a Report Periodicity

The Report Periodicity defines the frequency at which the Node B shall send measurement reports.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
CHOICE Report Periodicity Scale	M			
>millisecond				
>>Report Periodicity Value	M		INTEGER (1..6000,...)	Unit: ms Range: 10..60000 ms Step: 10 ms
>minute				
>>Report Periodicity Value	M		INTEGER (1..60,...)	Unit: min Range: 1..60 min Step: 1 min

### 9.2.1.51A Requested Data Value

The *Requested Data Value* IE contains the relevant data concerning the ongoing information exchange. The *Requested Data Value* IE shall include at least one of the following IE.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
DGPS Corrections	O		9.2.1.24B	
GPS Navigation Model & Time Recovery	O		9.2.1.31B	
GPS Ionospheric Model	O		9.2.1.31C	
GPS UTC Model	O		9.2.1.31D	
GPS Almanac	O		9.2.1.31F	
GPS Real-Time Integrity	O		9.2.1.31E	
GPS RX Pos	O		9.2.1.31G	

### 9.2.1.51B Requested Data Value Information

The *Requested Data Value Information* IE provides information on whether or not the Requested Data Value is available in the message and also the Requested Data Value itself if available. In case of "Periodic" and "On Modification" reporting, "Information Not Available" shall be used when at least one part of the requested information was not available at the moment of initiating the Information Reporting procedure.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
CHOICE Information Availability Indicator	M			
>Information Available				
>>Requested Data Value	M		9.2.1.51A	
>Information Not Available			NULL	

### 9.2.1.52 Resource Operational State

The Resource Operational State is used to indicate the current operational state of the associated resource following a Node B failure.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Resource Operational State			ENUMERATED ( Enabled, Disabled)	When a resource is marked as disabled, then its child resources are implicitly disabled. Cell Resource hierarchy can be referred to [6].

### 9.2.1.52A Retention Priority

Void.

### 9.2.1.52B RLC Mode

The *RLC Mode* IE indicates the RLC Mode used for a Priority Queue.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
RLC Mode			ENUMERATED ( RLC-AM, RLC-UM,...)	

### 9.2.1.53 RL ID

The RL ID is the unique identifier for one RL associated with a UE.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
RL ID			INTEGER (0..31)	

### 9.2.1.53a RNC-Id

This is the identifier of one RNC in UTRAN.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
RNC-Id			INTEGER (0..4095)	

### 9.2.1.53A SFN

System Frame Number of the cell, see ref. [17].

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
SFN			INTEGER (0..4095)	

### 9.2.1.53B Segment Type

Segment type as defined in [18].

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Segment Type			ENUMERATED ( First segment, First segment short, Subsequent segment, Last segment, Last segment short, Complete SIB, Complete SIB short, ...)	

9.2.1.53C SFN-SFN Measurement Threshold Information

The SFN-SFN Measurement Threshold Information defines the related thresholds SFN-SFN Observed Time Difference measurements which shall trigger the Event On Modification.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
SFN-SFN Change Limit	O		INTEGER(1..256)	Change of SFN-SFN value compared to previously reported value, which shall trigger a new report. Unit: chip Step: 1/16 chip
Predicted SFN-SFN Deviation Limit	O		INTEGER(1..256)	Deviation of the predicated SFN-SFN from the latest measurement result, which shall trigger a new report. Unit: chip Step: 1/16 chip

9.2.1.53D SFN-SFN Measurement Time Stamp

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
CHOICE <i>Mode</i>	M			
> <i>FDD</i>				
>>SFN	M		9.2.1.53A	Indicates the SFN of the reference cell at which the measurement has been performed.
> <i>TDD</i>				
>>SFN	M		9.2.1.53A	Indicates the SFN of the reference cell at which the measurement has been performed.
>>Time Slot	M		9.2.3.23	Indicates the Time Slot of the reference cell at which this measurement has been performed.

9.2.1.53E SFN-SFN Measurement Value Information

The *SFN-SFN Measurement Value Information* IE indicates the measurement result related to SFN-SFN Observed Time Difference measurements.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
<b>Successful Neighbouring Cell SFN-SFN Observed Time Difference Measurement Information</b>		<i>1..&lt;maxno MeasNCell &gt;</i>		
>UC-Id	M		9.2.1.65B	
>SFN-SFN Value	M		9.2.1.53F	
>SFN-SFN Quality	O		INTEGER (0..255)	Indicates the standard deviation (std) of the SFN-SFN Observed Time Difference measurements in 1/16 chip. $SFN-SFN\ Quality = \sqrt{E[(x-\mu)^2]}$ = std of reported SFN-SFN Value, where x is the reported SFN-SFN Value and $\mu = E[x]$ is the expectation value of x.
>SFN-SFN Drift Rate	M		INTEGER (-100..+100)	Indicates the SFN-SFN drift rate in 1/256 chip per second. A positive value indicates that the Reference cell clock is running at a greater frequency than the measured neighbouring cell.
>SFN-SFN Drift Rate Quality	O		INTEGER (0..100)	Indicates the standard deviation (std) of the SFN-SFN drift rate measurements in 1/256 chip per second. $SFN-SFN\ Drift\ Rate\ Quality = \sqrt{E[(x-\mu)^2]}$ = std of reported SFN-SFN Drift Rate, where x is the reported SFN-SFN Drift Rate and $\mu = E[x]$ is the expectation value of x.
>SFN-SFN Measurement Time Stamp	M		9.2.1.53D	
<b>Unsuccessful Neighbouring Cell SFN-SFN Observed Time Difference Measurement Information</b>		<i>0..&lt;maxno MeasNCell -1&gt;</i>		
>UC-Id	M		9.2.1.65B	

Range Bound	Explanation
<i>maxnoMeasNCell</i>	Maximum number of neighbouring cells that can be measured on

### 9.2.1.53F SFN-SFN Value

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
CHOICE Mode	M			
>FDD				
>>SFN-SFN	M		INTEGER (0..614399)	According to mapping in [22].
>TDD				
>>SFN-SFN	M		INTEGER (0..40961)	According to mapping in [23].

### 9.2.1.53G RL Specific DCH Information

The *RL Specific DCH Information* IE provides RL specific DCH Information for DCHs. In the case of a set of co-ordinated DCHs requiring a new transport bearer on Iub, the *Transport Layer Address* IE and the *Binding ID* IE in the *RL Specific DCH Information* IE shall be included only for one of the DCHs in the set of co-ordinated DCHs.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
<b>RL Specific DCH Information</b>		1..<maxno ofDCHs>		
>DCH ID	M		9.2.1.20	
>Binding ID	O		9.2.1.4	Shall be ignored if bearer establishment with ALCAP.
>Transport Layer Address	O		9.2.1.63	Shall be ignored if bearer establishment with ALCAP.

Range Bound	Explanation
maxnoofDCHs	Maximum number of DCHs for one UE

### 9.2.1.53H Scheduling Priority Indicator

Indicates the relative priority of the HS-DSCH [or E-DCH](#) data frame. Used by the Node B when scheduling HS-DSCH.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Scheduling Priority Indicator			INTEGER (0..15)	Relative priority of the HS-DSCH <a href="#">or E-DCH</a> data frame: "0" =Lowest Priority ... "15" =Highest Priority

### 9.2.1.53Ha Serving E-DCH RL

<a href="#">IE/Group Name</a>	<a href="#">Presence</a>	<a href="#">Range</a>	<a href="#">IE Type and Reference</a>	<a href="#">Semantics Description</a>
<a href="#">CHOICE Serving E-DCH RL</a>	<a href="#">M</a>			
<a href="#">&gt;Serving E-DCH RL in this Node B</a>				
<a href="#">&gt;&gt;Serving E-DCH RL ID</a>	<a href="#">M</a>		<a href="#">RL ID</a> <a href="#">9.2.1.53</a>	
<a href="#">&gt;Serving E-DCH RL not in this Node B</a>			<a href="#">NULL</a>	

### 9.2.1.53I SID

The *SID* IE provides the identity of the Size Index.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
SID			INTEGER (0..7)	

### 9.2.1.54 SIB Deletion Indicator

Void.



## 9.2.1.55 SIB Originator

Indicates if the Node B shall fill in the SIB information or not.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
SIB Originator			ENUMERATED (Node B, CRNC, ...)	

## 9.2.1.55A Signalling Bearer Request Indicator

The *Signalling Bearer Request Indicator* IE indicates if a new signalling bearer needs to be established for the control of Node B Communication Context.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Signalling Bearer Request Indicator			ENUMERATED (Bearer Requested)	

## 9.2.1.56 Shutdown Timer

The shutdown timer shall indicate the length of time available to the CRNC to perform the block of a resource when a Normal priority block is requested.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Shutdown Timer			INTEGER (1..3600)	Unit: second

## 9.2.1.56a T1

The *T1* IE is used as described in ref [32] subclause 11.6.2.3.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
T1			ENUMERATED (10, 20, 30, 40, 50, 60, 70, 80, 90, 100, 120, 140, 160, 200, 300, 400, ...)	Unit: ms Node B may use this value to stop the re-transmission of the corresponding MAC-hs PDU.

## 9.2.1.56A T\_RLFAILURE

The Radio Link Failure procedure shall be triggered after a period of time T\_RLFAILURE has elapsed with a persisting out-of-sync indication (see also ref. [10] and [21]).

Information Element/Group Name	Presence	Range	IE Type and Reference	Semantics Description
T_RLFAILURE			INTEGER (0..255)	Unit: second Range: 0 .. 25.5 s Step: 0.1 s

## 9.2.1.56B Start Of Audit Sequence Indicator

Indicates if the AUDIT REQUEST message initiates a new audit sequence or not.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Start Of Audit Sequence Indicator			ENUMERATED ( Start Of Audit Sequence, Not Start Of Audit Sequence)	

### 9.2.1.56C TFCI2 Bearer Request Indicator

*TFCI2 Bearer Request Indicator* IE indicates if a new transport bearer on which the DSCH TFCI Signaling control frames shall be received is required.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
TFCI2 Bearer Request Indicator			ENUMERATED (New Bearer Requested)	

### 9.2.1.57 TFCI Presence

The TFCI Presence parameter indicates whether the TFCI shall be included. [TDD - If it is present in the timeslot, it will be mapped to the channelisation code defined by [19].]

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
TFCI presence			ENUMERATED ( Present, Not Present)	

### 9.2.1.58 TFCS (Transport Format Combination Set)

The Transport Format Combination Set is defined as a set of Transport Format Combinations on a Coded Composite Transport Channel. It is the allowed Transport Format Combinations of the corresponding Transport Channels. The DL Transport Format Combination Set is applicable for DL Transport Channels.

[FDD - Where the UE is assigned access to one or more DSCH transport channels then the UTRAN has the choice of two methods for signalling the mapping between TFCI(field 2) values and the corresponding TFC:

#### Method #1 - TFCI range

The mapping is described in terms of a number of groups, each group corresponding to a given transport format combination (value of CTFC(field2)). The CTFC(field2) value specified in the first group applies for all values of TFCI(field 2) between 0 and the specified 'Max TFCI(field2) value'. The CTFC(field2) value specified in the second group applies for all values of TFCI(field 2) between the 'Max TFCI(field2) value' specified in the last group plus one and the specified 'Max TFCI(field2) value' in the second group. The process continues in the same way for the following groups with the TFCI(field 2) value used by the UE in constructing its mapping table starting at the largest value reached in the previous group plus one.

#### Method #2 - Explicit

The mapping between TFCI(field 2) value and CTFC(field2) is spelt out explicitly for each value of TFCI (field2) ]

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
CHOICE <i>DSCH</i>	M			
> <i>No split in TFCI</i>				This choice is made if : a) The TFCS refers to the Uplink. OR b) The mode is FDD and none of the Radio Links of the concerned UE are assigned any DSCH transport channels. OR c) The mode is TDD.
>>TFCS		1..<maxno ofTFCs>		The first instance of the parameter corresponds to TFCI zero, the second to 1 and so on. [TDD - The first entry (for TFCI 0) should be ignored by the receiver.]
>>>CTFC	M		9.2.1.18A	
>>>CHOICE <i>Gain Factors</i>	C-PhysChan			
>>>>Signalled <i>Gain Factors</i>				
>>>>>CHOICE <i>Mode</i>	M			
>>>>>>FDD				
>>>>>>>Gain Factor $\beta_c$	M		INTEGER (0..15)	For UL DPCCCH or control part of PRACH or control part of PCPCH in FDD; mapping in accordance to [9]
>>>>>>>Gain Factor $\beta_D$	M		INTEGER (0..15)	For UL DPDCH or data part of PRACH or data part of PCPCH in FDD; mapping in accordance to [9]
>>>>>>>TDD				
>>>>>>>>Gain Factor $\beta$	M		iNTEGER (0..15)	For UL DPCH in TDD; mapping in accordance to [20].
>>>>>>>>Reference TFC nr	O		INTEGER (0..3)	If this TFC is a reference TFC, this IE indicates the reference number.
>>>>>Computed <i>Gain Factors</i>				
>>>>>>>>Reference TFC nr	M		INTEGER (0..3)	Indicates the reference TFC to be used to calculate the gain factors for this TFC.
> <i>There is a split in the TFCI</i>				This choice is made if : a) The TFCS refers to the Downlink. AND b) The mode is FDD and one of the Radio Links of the concerned UE is assigned one or more DSCH transport channels.
>>Transport Format Combination DCH		1..<maxTF Cl_1_Comb>		The first instance of the <i>Transport Format Combination DCH</i> IE corresponds to TFCI (field 1) = 0, the second to TFCI (field 1) = 1 and so on.
>>>CTFC(field1)	M		CTFC 9.2.1.18A	
>>CHOICE <i>Signalling Method</i>	M			
>>>TFCI Range				
>>>>TFC Mapping On DSCH		1..<maxNo TFCIGrou		

		<i>ps</i> >		
>>>>Max TFCI(field2) Value	M		INTEGER (1..1023)	This is the Maximum value in the range of TFCI(field2) values for which the specified CTFC(field2) applies
>>>>CTFC(field2)	M		CTFC 9.2.1.18A	
>>> <i>Explicit</i>				
>>>>Transport Format Combination DSCH		1..<maxTF Cl_2_Combs>		The first instance of the Transport Format Combination DSCH IE corresponds to TFCI (field2) = 0, the second to TFCI (field 2) = 1 and so on.
>>>>CTFC(field2)	M		CTFC 9.2.1.18A	

Condition	Explanation
PhysChan	The IE shall be present if the TFCS concerns a UL DPCH or PRACH channel [FDD – or PCPCH channel].

Range Bound	Explanation
<i>maxnoofTFCs</i>	The maximum number of Transport Format Combinations
<i>maxTFCI_1_Combs</i>	Maximum number of TFCI (field 1) combinations (given by 2 raised to the power of the length of the TFCI (field 1))
<i>maxTFCI_2_Combs</i>	Maximum number of TFCI (field 2) combinations (given by 2 raised to the power of the length of the TFCI (field 2))
<i>maxNoTFCIGroups</i>	Maximum number of groups, each group described in terms of a range of TFCI(field 2) values for which a single value of CTFC(field2) applies

### 9.2.1.58A TNL QoS

This IE indicates the TNL QoS characteristics of the transport bearer for the uplink data traffic.

When the *DS Field* IE is used, the value of this IE is configurable by the operator.

When the *Generic Traffic Category* IE is used, generic traffic categories are implementation-specific (e.g. they may be determined by the sender from the application parameters). The value assigned to each of these categories and sent in the *Generic Traffic Category* IE is configurable by the operator, as well as the mapping of this value to DS field [35] at the Node B side.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
CHOICE <i>TNL QoS type</i>	M			
> <i>DS Field</i>				
>>DS Field	M		BIT STRING (8)	DS Field as defined in [35]. Typically used when the NodeB and its CRNC are in the same DS domain as defined in [36].
> <i>Generic Traffic Category</i>				
>>Generic Traffic Category	M		BIT STRING (8)	

### 9.2.1.59 Transport Format Set

The Transport Format Set is defined as the set of Transport Formats associated to a Transport Channel, e.g. DCH.

[TDD - The Transport Format Set for each transport channel within the same CCTrCH shall have the same value for the 2<sup>nd</sup> Interleaving Mode IE.]

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
<b>Dynamic Transport Format Information</b>		$1..<maxTFcount>$		The first instance of the parameter corresponds to TFI zero, the second to 1 and so on.
>Number of Transport Blocks	M		INTEGER (0..512)	
>Transport Block Size	C-Blocks		INTEGER (0..5000)	Unit: Bits
>CHOICE Mode	M			
>>TDD				
>>>Transmission Time Interval Information	C-TTIdynamic	$1..<maxTTIcount>$		
>>>>Transmission Time Interval	M		ENUMERATED (10, 20, 40, 80,...)	Unit: ms
<b>Semi-Static Transport Format Information</b>		1		
>Transmission Time Interval	M		ENUMERATED (10, 20, 40, 80, dynamic,...,5)	Unit: ms; Value "dynamic" for TDD only; Value "5" for LCR TDD only
>Type Of Channel Coding	M		ENUMERATED (No codingTDD, Convolutional, Turbo, ...)	[FDD - The value "No codingTDD" shall be treated as logical error if received]
>Coding Rate	C-Coding		ENUMERATED (1/2, 1/3,...)	
>Rate Matching Attribute	M		INTEGER (1..maxRM)	
>CRC Size	M		ENUMERATED (0, 8, 12, 16, 24,...)	
>CHOICE Mode	M			
>>TDD				
>>>2 <sup>nd</sup> Interleaving Mode	M		ENUMERATED (Frame related, Timeslot related, ...)	

Condition	Explanation
Blocks	The IE shall be present if the <i>Number Of Transport Blocks</i> IE is set to a value greater than 0.
Coding	The IE shall be present if the <i>Type Of Channel Coding</i> IE is set to "Convolutional" or "Turbo".
TTIdynamic	The IE shall be present if the <i>Transmission Time Interval</i> IE in the <i>Semi-Static Transport Format Information</i> IE is set to "dynamic".

Range Bound	Explanation
<i>maxTFcount</i>	Maximum number of different Transport Formats that can be included in the Transport Format Set for one transport channel
maxRM	Maximum number that could be set as rate matching attribute for a transport channel
<i>maxTTIcount</i>	The amount of different TTIs that are possible for that Transport Format

### 9.2.1.60 ToAWE

TOAWE is the window endpoint. DL data frames are expected to be received before this window endpoint. TOAWE is defined with a positive value relative Latest Time of Arrival (LTOA). A data frame arriving after TOAWE gives a Timing Adjustment Control frame response.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
ToAWE			INTEGER (0..2559)	Unit: ms

### 9.2.1.61 ToAWS

TOAWS is the window startpoint. DL data frames are expected to be received after this window startpoint. TOAWS is defined with a positive value relative Time of Arrival Window Endpoint (TOAWE). A data frame arriving before TOAWS gives a Timing Adjustment Control frame response.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
ToAWS			INTEGER (0..1279)	Unit: ms

### 9.2.1.62 Transaction ID

The transaction ID is used to associate all the messages belonging to the same procedure. Messages belonging to the same procedure shall use the same transaction ID.

The transaction ID is determined by the initiating peer of a procedure. For common procedures the transaction ID shall uniquely identify a procedure within all ongoing parallel procedures initiated by one protocol peer, using the same procedure code and signalled over the same Node B Control Port. For dedicated procedures the transaction ID shall uniquely identify a procedure within all ongoing parallel procedures initiated by one protocol peer, using the same procedure code and initiated towards the same Node B/CRNC context.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
CHOICE <i>Transaction ID Length</i>				The Transaction ID shall be interpreted for its integer value, not for the type of encoding ("short" or "long").
> <i>Short</i>				
>>Transaction ID Value	M		INTEGER (0..127)	
> <i>Long</i>				
>>Transaction ID Value	M		INTEGER (0..32767)	

### 9.2.1.62A Transport Bearer Request Indicator

Indicates whether a new transport bearer needs to be established for carrying the concerned transport channel.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Transport Bearer Request Indicator			ENUMERATED ( Bearer Requested, Bearer Not Requested, ...)	

### 9.2.1.63 Transport Layer Address

In case of transport bearer establishment with ALCAP [2][31], this IE contains the address to be used for Transport Network Control Plane signalling to establish the transport bearer according to [2][31].

In order to allow transport bearer establishment without ALCAP, this IE contains the address of the transport bearer to be used for the user plane transport.

For details on the Transport Address used see ref. [2][31].

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Transport Layer Address			BIT STRING (1..160, ...)	

### 9.2.1.64 TSTD Indicator

Indicates if TSTD shall be active or not.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
TSTD Indicator			ENUMERATED ( active, inactive)	

### 9.2.1.64A $T_{\text{UTRAN-GPS}}$ Measurement Value Information

The  $T_{\text{UTRAN-GPS}}$  *Measurement Value Information* IE indicates the measurement results related to the UTRAN GPS Timing of Cell Frames for UE Positioning measurements.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
$T_{\text{UTRAN-GPS}}$		1		Indicates the UTRAN GPS Timing of Cell Frames for UE Positioning. According to mapping in [22]. Significant values range from 0 to 37158911999999.
>MS	M		INTEGER (0..16383)	Most Significant Part
>LS	M		INTEGER (0..4294967295)	Least Significant Part
$T_{\text{UTRAN-GPS}}$ Quality	O		INTEGER (0..255)	Indicates the standard deviation (std) of the $T_{\text{UTRAN-GPS}}$ measurements in 1/16 chip. $T_{\text{UTRAN-GPS}}$ Quality = $\sqrt{E[(x-\mu)^2]}$ = std of reported $T_{\text{UTRAN-GPS}}$ Value, where x is the reported $T_{\text{UTRAN-GPS}}$ Value and $\mu = E[x]$ is the expectation value of x.
$T_{\text{UTRAN-GPS}}$ Drift Rate	M		INTEGER (-50..+50)	Indicates the $T_{\text{UTRAN-GPS}}$ drift rate in 1/256 chip per second. A positive value indicates that the UTRAN clock is running at a lower frequency than GPS clock.
$T_{\text{UTRAN-GPS}}$ Drift Rate Quality	O		INTEGER (0..50)	Indicates the standard deviation (std) of the $T_{\text{UTRAN-GPS}}$ drift rate measurements in 1/256 chip per second. $T_{\text{UTRAN-GPS}}$ Drift Rate Quality = $\sqrt{E[(x-\mu)^2]}$ = std of reported $T_{\text{UTRAN-GPS}}$ Drift Rate, where x is the reported $T_{\text{UTRAN-GPS}}$ Drift Rate and $\mu = E[x]$ is the expectation value of x.

### 9.2.1.64B $T_{\text{UTRAN-GPS}}$ Measurement Threshold Information

The  $T_{\text{UTRAN-GPS}}$  Measurement Threshold Information defines the related thresholds for UTRAN GPS Timing of Cell Frames for UE Positioning measurements shall trigger the event On Modification.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
$T_{\text{UTRAN-GPS}}$ Change Limit	O		INTEGER (1..256)	Change of $T_{\text{UTRAN-GPS}}$ value compared to previously reported value, which shall trigger a new report. Unit in 1/16 chip.
Predicted $T_{\text{UTRAN-GPS}}$ Deviation Limit	O		INTEGER (1..256)	Deviation of the predicated $T_{\text{UTRAN-GPS}}$ from the latest measurement result, which shall trigger a new report. Unit in 1/16 chip.

### 9.2.1.64C $T_{\text{UTRAN-GPS}}$ Accuracy Class

The  $T_{\text{UTRAN-GPS}}$  Accuracy Class IE indicates the accuracy class of the UTRAN GPS Timing of Cell Frames for UE Positioning measurement.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
$T_{\text{UTRAN-GPS}}$ Accuracy Class			ENUMERATED ( Accuracy Class A, Accuracy Class B, Accuracy Class C, ...)	More information about $T_{\text{UTRAN-GPS}}$ Measurement Accuracy Class is included in [22].

### 9.2.1.65 UARFCN

Designates the central frequency of the channel number.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
UARFCN			INTEGER (0..16383,...)	Unit: MHz Range: 0 .. 3276.6 MHz Step: 0.2 MHz (subclause 5.4.3 in [14] and [15])

### 9.2.1.65A UL Capacity Credit

The capacity credit indicates to the CRNC the Uplink capacity of a Local Cell or a Local Cell Group.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
UL Capacity Credit			INTEGER (0..65535)	

### 9.2.1.65B UTRAN Cell Identifier (UC-Id)

The UC-Id (UTRAN Cell identifier) is the identifier of a cell in one UTRAN.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
RNC-Id	M		9.2.1.53a	
C-Id	M		9.2.1.9	

### 9.2.1.66 UL FP Mode

This parameter defines if normal or silent mode of the Frame Protocol shall be used for the UL.



IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
UL FP Mode			ENUMERATED (Normal, Silent, ...)	

### 9.2.1.67 UL interference level

Void.

### 9.2.1.67A UL SIR

The UL SIR indicates a received UL SIR.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
UL SIR			INTEGER (-82..173)	Value = UL SIR/10 Unit: dB Range: -8.2 .. +17.3 dB Step: 0.1 dB

### 9.2.1.68 Unidirectional DCH Indicator

The *Unidirectional DCH Indicator* IE indicates that the DCH is unidirectional.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Unidirectional DCH Indicator			ENUMERATED (Downlink DCH only, Uplink DCH only)	"Downlink DCH only" shall only be used by TDD.

## 9.2.2 FDD specific parameters

### 9.2.2.a ACK-NACK Repetition Factor

The *ACK-NACK Repetition Factor* IE indicates the number of consecutive repetitions of the ACK and NACK.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
ACK-NACK Repetition Factor			INTEGER (1..4,...)	Step: 1

### 9.2.2.b ACK Power Offset

The *ACK Power Offset* IE indicates Power offset used in the UL between the HS-DPCCH slot carrying HARQ ACK information and the associated DPCCH.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
ACK Power Offset			INTEGER (0..8,...)	According to mapping in ref. [9] subclause 4.2.1.

### 9.2.2.A Active Pattern Sequence Information

Defines the parameters for the compressed mode gap pattern sequence activation. For details see ref. [18].

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
CM Configuration Change CFN	M		CFN 9.2.1.7	
<b>Transmission Gap Pattern Sequence Status</b>		<i>0..&lt;maxT GPS&gt;</i>		
>TGPS Identifier	M		INTEGER (1..maxTGPS)	If the group is not present, none of the pattern sequences are activated. References an already defined sequence.
>TGPRC	M		INTEGER (0..511)	The number of transmission gap patterns within the Transmission Gap Pattern Sequence. "0"=Infinity
>TGCFN	M		CFN 9.2.1.7	Connection Frame Number of the first frame of the first pattern 1 within the Transmission Gap Pattern Sequence.

Range Bound	Explanation
<i>maxTGPS</i>	Maximum number of active pattern sequences. Value 6.

### 9.2.2.B Adjustment Period

The *Adjustment Period* IE defines the period to be used for power balancing.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Adjustment Period			INTEGER (1..256)	Unit: Frames

### 9.2.2.C Adjustment Ratio

The *Adjustment Ratio* IE (*Radj*) defines the convergence rate used for the associated Adjustment Period.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Adjustment Ratio			INTEGER (0..100)	Unit: None Range: 0..1 Step: 0.01

### 9.2.2.D AICH Power

The *AICH Power* IE indicates a power level (measured as the power per transmitted acquisition indicator when several AIs are transmitted in parallel) relative to the primary CPICH power configured in a cell. If Transmit Diversity is applied to the AICH, the *AICH Power* IE indicates the power offset between the linear sum of the power for the AICH on all branches and the Primary CPICH power configured in a cell.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
AICH Power			INTEGER (-22..+5)	Unit: dB Range: -22 .. +5 dB Step: 1 dB

## 9.2.2.1 AICH Transmission Timing

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
AICH Transmission Timing			ENUMERATED (0, 1)	See parameter AICH_Transmission_Timing in ref. [7].

## 9.2.2.1A AP Preamble Signature

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
AP Preamble Signature			INTEGER (0..15)	Described in ref. [9]

## 9.2.2.1B AP Sub Channel Number

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
AP Sub Channel Number			INTEGER (0..11)	Described in ref. [10]

## 9.2.2.1Ba Best Cell Portions

*Best Cell Portions* IE indicates the best received cell portions and their SIR values when Cell Portions are defined in the cell.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
<b>Best Cell Portions</b>		1..<maxno ofBestCell Portions>		
>Cell Portion ID	M		9.2.2.1Ca	
>SIR Value	M		INTEGER (0..63)	According to mapping in [22] and [23]

Range Bound	Explanation
<i>maxnoofBestCellPortions</i>	Maximum number of reported Best Received Cell Portions

## 9.2.2.1C CD Sub Channel Numbers

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
CD Sub Channel Numbers			BIT STRING (12)	Each bit indicates availability for a subchannel, where the subchannels are numbered "subchannel 0" to "subchannel 11". The value 1 of a bit indicates that the corresponding subchannel is available and the value 0 indicates that it is not available. The order of bits is to be interpreted according to subclause 9.3.4. See also [10].

## 9.2.2.1Ca Cell Portion ID

Cell Portion ID is the unique identifier for a cell portion within a cell. See [4].

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Cell Portion ID			INTEGER (0..63,...)	

### 9.2.2.1D Channel Assignment Indication

The Channel Assingment Indication indicates whether CA is active or inactive. When CA is active, CPCH is in Versatile Channel Assingment Method (VCAM) mode and when CA is inactive, CPCH is in UE Channel Selection Method (UCSM) mode. In VCAM mode (CA active), CA message in CD/CA-ICH shall be sent.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Channel Assignment Indication			ENUMERATED ( CA Active, CA Inactive)	

### 9.2.2.2 Chip Offset

The Chip Offset is defined as the radio timing offset inside a radio frame. The Chip offset is used as offset for the DL DPCH relative to the Primary CPICH timing.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Chip Offset			INTEGER (0..38399)	Unit: chips

### 9.2.2.2A Closed Loop Timing Adjustment Mode

Indicates when the phase/amplitude adjustment is performed in the DL in relation to the receipt of the UL feedback command in case of closed loop mode transmit diversity on DPCH.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Closed Loop Timing Adjustment Mode			ENUMERATED ( Offset1, Offset2, ...)	According to ref. [10] subclause 7.1: "Offset1" = slot(j+1)mod15 "Offset2" = slot(j+2)mod15

### 9.2.2.3 Common Channels Capacity Consumption Law

Void.

### 9.2.2.3A Compressed Mode Deactivation Flag

The Compressed Mode Deactivation Flag indicates whether Compressed Mode shall be deactivated or not in the new RL.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Compressed Mode Deactivation Flag			ENUMERATED ( Deactivate, Maintain Active)	

### 9.2.2.4 Compressed Mode Method

Void.

## 9.2.2.4A CPCH Allowed Total Rate

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
CPCH Allowed Total Rate			ENUMERATED ( 15, 30, 60, 120, 240, 480, 960, 1920, 2880, 3840, 4800, 5760,...)	Channel Symbol Rate Unit: ksp/s

## 9.2.2.4B CPCH Scrambling Code Number

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
CPCH Scrambling Code Number			INTEGER (0..79)	Described in ref. [9]

## 9.2.2.4C CPCH UL DPCCH Slot Format

Indicates the slot format used in UL CPCH message control part, accordingly to ref. [7]

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
CPCH UL DPCCH Slot Format			INTEGER (0..2,...)	

## 9.2.2.4Ca CQI Power Offset

The *CQI Power Offset* IE indicates Power offset used in the UL between the HS-DPCCH slots carrying CQI information and the associated DPCCH.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
CQI Power Offset			INTEGER (0..8,...)	According to mapping in ref. [9] subclause 4.2.1.

## 9.2.2.4Cb CQI Repetition Factor

The *CQI Repetition Factor* IE indicates the number of consecutive repetitions of the CQI.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
CQI Repetition Factor			INTEGER (1..4,...)	Step: 1

## 9.2.2.4D DCH FDD Information

The *DCH FDD Information* IE provides information for DCHs to be established.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
<b>DCH FDD Information</b>		1..<maxno ofDCHs>			–	
>Payload CRC Presence Indicator	M		9.2.1.49		–	
>UL FP Mode	M		9.2.1.66		–	
>ToAWS	M		9.2.1.61		–	
>ToAWE	M		9.2.1.60		–	
<b>&gt;DCH Specific Info</b>		1..<maxno ofDCHs>			–	
>>DCH ID	M		9.2.1.20		–	
>>Transport Format Set	M		9.2.1.59	For UL	–	
>>Transport Format Set	M		9.2.1.59	For DL	–	
>>Allocation/Retention Priority	M		9.2.1.1A		–	
>>Frame Handling Priority	M		9.2.1.30		–	
>>QE-Selector	M		9.2.1.50A		–	
>>Unidirectional DCH Indicator	O		9.2.1.68		YES	reject
>TNL QoS	O		9.2.1.58A		YES	ignore

Range Bound	Explanation
<i>maxnoofDCHs</i>	Maximum number of DCHs for one UE

#### 9.2.2.4E DCHs FDD To Modify

The *DCHs FDD To Modify* IE provides information for DCHs to be modified.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
<b>DCHs FDD To Modify</b>		1..<maxno ofDCHs>			–	
>UL FP Mode	O		9.2.1.66		–	
>ToAWS	O		9.2.1.61		–	
>ToAWE	O		9.2.1.60		–	
>Transport Bearer Request Indicator	M		9.2.1.62A		–	
<b>&gt;DCH Specific Info</b>		1..<maxno ofDCHs>			–	
>>DCH ID	M		9.2.1.20		–	
>>Transport Format Set	O		9.2.1.59	For the UL.	–	
>>Transport Format Set	O		9.2.1.59	For the DL.	–	
>>Allocation/Retention Priority	O		9.2.1.1A		–	
>>Frame Handling Priority	O		9.2.1.30		–	
>TNL QoS	O		9.2.1.58A		YES	ignore

Range Bound	Explanation
<i>maxnoofDCHs</i>	Maximum number of DCHs for one UE

#### 9.2.2.5 D-Field Length

Void.

## 9.2.2.6 Dedicated Channels Capacity Consumption Law

Void.

## 9.2.2.7 Diversity Control Field

Void.

## 9.2.2.8 Diversity Indication

Void.

## 9.2.2.9 Diversity Mode

Define the diversity mode to be applied.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Diversity Mode			ENUMERATED (None, STTD, Closed loop mode 1, Closed loop mode 2, ...)	

## 9.2.2.10 DL DPCH Slot Format

Indicates the slot format used in DPCH in DL, accordingly to ref. [7].

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
DL DPCH Slot Format			INTEGER (0..16,...)	

## 9.2.2.10A DL DPCH Timing Adjustment

The DL DPCH Timing Adjustment indicates that a timing adjustment of the related radio link is required. It also indicates whether the timing adjustment shall consist of a timing advance or a timing delay with respect to the SFN timing. The adjustment always consists of 256 chips.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
DL DPCH Timing Adjustment			ENUMERATED (timing advance, timing delay)	The size of the timing adjustment is 256 chips.

## 9.2.2.11 DL frame type

Void.

9.2.2.12 DL or Global Capacity Credit

Void.

9.2.2.12A DL\_power\_averaging\_window\_size

The *DL\_power\_averaging\_window\_size* IE defines the window size when Limited Power Increase is used [10].

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
DL_power_averaging_window_size			INTEGER (1..60)	Unit: inner loop power adjustments Range: 1..60 Step: 1 adjustment

9.2.2.12B DL Power Balancing Information

The *DL Power Balancing Information* IE provides information for power balancing to be activated in the relevant RL(s).

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Power Adjustment Type	M		9.2.2.27	
DL Reference Power	C-Common		DL Power 9.2.1.21	Power on DPCH
<b>DL Reference Power Information</b>	C-Individual	1..<maxno ofRLs>		
>RL ID	M		9.2.1.53	
>DL Reference Power	M		DL Power 9.2.1.21	Power on DPCH
Max Adjustment Step	C-Common OrIndividual		9.2.2.20	
Adjustment Period	C-Common OrIndividual		9.2.2.B	
Adjustment Ratio	C-Common OrIndividual		9.2.2.C	

Condition	Explanation
Common	The IE shall be present if the <i>Power Adjustment Type</i> IE is set to "Common".
Individual	The IE shall be present if the <i>Power Adjustment Type</i> IE is set to "Individual".
CommonOrIndividual	The IE shall be present if the <i>Power Adjustment Type</i> IE is set to "Common" or "Individual".

Range Bound	Explanation
maxnoofRLs	Maximum number of Radio Links for a UE

9.2.2.12C DL Power Balancing Activation Indicator

The *DL Power Balancing Activation Indicator* IE indicates that the power balancing is activated in the RL.



IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
DL Power Balancing Activation Indicator			ENUMERATED (DL Power Balancing Activated)	

### 9.2.2.12D DL Power Balancing Updated Indicator

The *DL Power Balancing Updated Indicator* IE indicates that the power balancing related parameters is updated in the RL.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
DL Power Balancing Updated Indicator			ENUMERATED (DL Power Balancing Activated)	

### 9.2.2.13 DL Scrambling Code

DL scrambling code to be used by the RL. One cell may have multiple DL scrambling codes available.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
DL Scrambling Code			INTEGER (0..15)	"0" = Primary scrambling code of the cell "1".."15" = Secondary scrambling code

### 9.2.2.13A DL TPC Pattern 01 Count

The *DL TPC Pattern 01 Count* IE contains the value of the parameter n, which is used for determining the DL TPC pattern on Radio Links marked with "first RLS" by the *First RLS indicator* IE before UL synchronisation is achieved.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
DL TPC Pattern 01 Count			INTEGER(0..30,...)	

### 9.2.2.13B DSCH FDD Information

The *DSCH FDD Information* IE provides information for DSCHs to be established.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
<b>DSCH FDD Information</b>		<i>1..&lt;max noofDS CHs&gt;</i>			–	
>DSCH ID	M		9.2.1.27		–	
>Transport Format Set	M		9.2.1.59	For DSCH	–	
>Allocation/Retention Priority	M		9.2.1.1A		–	
>Frame Handling Priority	M		9.2.1.30		–	
>ToAWS	M		9.2.1.61		–	
>ToAWE	M		9.2.1.60		–	
>Binding ID	O		9.2.1.4	Shall be ignored if bearer establishment with ALCAP.	YES	ignore
>Transport Layer Address	O		9.2.1.63	Shall be ignored if bearer establishment with ALCAP.	YES	ignore

Range Bound	Explanation
<i>maxnoofDSCHs</i>	Maximum number of DSCHs for one UE

### 9.2.2.13C DPC Mode

The *DPC Mode* IE indicates the DPC mode to be applied [10].

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
DPC Mode			ENUMERATED ( Mode0, Mode1, ...)	<p>"Mode0": The Node B shall estimate the UE transmitted TPC command and update the DL power in every slot</p> <p>"Mode1": The Node B shall estimate the UE transmitted TPC command over three slots and shall update the DL power in every three slots</p>

### 9.2.2.13D DSCH FDD Common Information

The DSCH Common Information includes common information for all DSCHs for one UE.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Enhanced DSCH PC Indicator	O		9.2.2.13G	
Enhanced DSCH PC	C-EDSCHPC On		9.2.2.13E	

Condition	Explanation
EDSCHPCOn	The IE shall be present if the <i>Enhanced DSCH PC Indicator</i> IE is set to "Enhanced DSCH PC Active in the UE".

### 9.2.2.13Da E-DCH FDD Information

The E-DCH FDD Information IE provides information for an E-DCH to be established.

<u>IE/Group Name</u>	<u>Presence</u>	<u>Range</u>	<u>IE Type and Reference</u>	<u>Semantics Description</u>	<u>Criticality</u>	<u>Assigned Criticality</u>
E-DCH MAC-d Flows Information	M		9.2.1.29ab			
<u>UE Capabilities Information</u>		1				
>E-DCH Physical Layer Category	M		9.2.1.29ae			

<u>Range bound</u>	<u>Explanation</u>
<u>maxnoofMACdFlows</u>	Maximum number of MAC-d flows.

### 9.2.2.13Db E-DCH FDD Information Response

The E-DCH FDD Information Response IE provides information for E-DCH MAC-d flows that have been established or modified. It also provides additional E-DCH information determined within the Node B.

<u>IE/Group Name</u>	<u>Presence</u>	<u>Range</u>	<u>IE Type and Reference</u>	<u>Semantics Description</u>
<u>E-DCH MAC-d Flow Specific Information Response</u>		<u>0..&lt;maxnoof MACdFlows</u> <u>≥</u>		
>E-DCH MAC-d Flow ID	M		9.2.1.29ad	
>Binding ID	O		9.2.1.4	
>Transport Layer Address	O		9.2.1.63	

<u>Range bound</u>	<u>Explanation</u>
<u>maxnoofMACdFlows</u>	Maximum number of MAC-d flows.

### 9.2.2.13Dc E-DCH FDD DL Control Channel Information

The E-DCH FDD DL Control Channel Information IE provides information for E-DCH specific DL Control Channels to be provided to UE via RRC signalling.

<u>IE/Group Name</u>	<u>Presence</u>	<u>Range</u>	<u>IE Type and Reference</u>	<u>Semantics Description</u>
E-AGCH And E-RGCH/E-HICH FDD Scrambling Code	O		DL Scrambling Code 9.2.2.13	Scrambling code on which E-AGCH, E-RGCH and E-HICH are transmitted. 0= Primary scrambling code of the cell 1...15 = Secondary scrambling code
E-AGCH Channelisation Code	O		9.2.2.14	
E-RNTI	O		9.2.1.29af	
E-RGCH/E-HICH Channelisation Code	M		9.2.2.14	
E-RGCH Sequence Number	M		INTEGER (1..20)	
E-HICH Sequence Number	M		INTEGER (1..20)	

### 9.2.2.13De E-DCH RL Indication

Indicates whether a RL is an E-DCH RL.

<u>IE/Group Name</u>	<u>Presence</u>	<u>Range</u>	<u>IE Type and Reference</u>	<u>Semantics Description</u>
<a href="#">E-DCH RL Indication</a>			<a href="#">ENUMERATED(E-DCH, non E-DCH)</a>	

### 9.2.2.13Df [E-DCH FDD Information to Modify](#)

The *E-DCH FDD Information to Modify* IE is used for the modification of an E-DCH.

<u>IE/Group Name</u>	<u>Presence</u>	<u>Range</u>	<u>IE Type and Reference</u>	<u>Semantics Description</u>
<a href="#">E-DCH MAC-d Flow Specific Information</a>		<a href="#">0..&lt;maxno ofMACdFlows&gt;</a>		
<a href="#">&gt;E-DCH MAC-d Flow ID</a>	<a href="#">M</a>		<a href="#">9.2.1.31I</a>	
<a href="#">&gt;Allocation/Retention Priority</a>	<a href="#">O</a>		<a href="#">9.2.1.1A</a>	
<a href="#">&gt;Transport Bearer Request Indicator</a>	<a href="#">M</a>		<a href="#">9.2.1.62A</a>	
<a href="#">&gt;Binding ID</a>	<a href="#">O</a>		<a href="#">9.2.1.4</a>	<a href="#">Shall be ignored if bearer establishment with ALCAP.</a>
<a href="#">&gt;Transport Layer Address</a>	<a href="#">O</a>		<a href="#">9.2.1.63</a>	<a href="#">Shall be ignored if bearer establishment with ALCAP.</a>
<a href="#">&gt;Maximum Number Of Transmissions For E-DCH</a>	<a href="#">O</a>		<a href="#">9.2.1.39a</a>	
<a href="#">Data Description Indicator</a>		<a href="#">0..&lt;maxno ofDDIs&gt;</a>		
<a href="#">&gt;E-DCH DDI Value</a>	<a href="#">M</a>		<a href="#">9.2.1.29ah</a>	
<a href="#">&gt;Associated E-DCH MAC-d Flow ID</a>	<a href="#">M</a>		<a href="#">E-DCH MAC-d Flow 9.2.1.29ad</a>	
<a href="#">&gt;MAC-d PDU Size</a>	<a href="#">M</a>		<a href="#">9.2.1.38A</a>	
<a href="#">&gt;Scheduling Priority Indicator</a>	<a href="#">M</a>		<a href="#">9.2.1.53H</a>	
<a href="#">&gt;MAC-es Guaranteed Bit Rate</a>	<a href="#">O</a>		<a href="#">9.2.1.38aa</a>	

<u>Range bound</u>	<u>Explanation</u>
<a href="#">maxnoofMACdFlows</a>	<a href="#">Maximum number of MAC-d flows.</a>
<a href="#">maxnoofDDIs</a>	<a href="#">Maximum number of Data Description Indicators</a>

### 9.2.2.13E [Enhanced DSCH PC](#)

The Enhanced DSCH PC includes all the parameters which are needed for DSCH power control improvement during soft handover.

<u>IE/Group Name</u>	<u>Presence</u>	<u>Range</u>	<u>IE Type and Reference</u>	<u>Semantics Description</u>
Enhanced DSCH PC Wnd	<a href="#">M</a>		<a href="#">9.2.2.13H</a>	
Enhanced DSCH PC Counter	<a href="#">M</a>		<a href="#">9.2.2.13F</a>	
Enhanced DSCH Power Offset	<a href="#">M</a>		<a href="#">9.2.2.13I</a>	

### 9.2.2.13F [Enhanced DSCH PC Counter](#)

The Enhanced DSCH PC Counter parameter gives the number of correct cell ID command to receive in the averaging window, *Enhanced DSCH PC Wnd* IE, see ref. [10] subclause 5.2.2.

<u>IE/Group Name</u>	<u>Presence</u>	<u>Range</u>	<u>IE Type and Reference</u>	<u>Semantics Description</u>
Enhanced DSCH PC Counter			<a href="#">INTEGER(1..50)</a>	

### 9.2.2.13G Enhanced DSCH PC Indicator

The Enhanced DSCH PC Indicator indicates whether Enhanced DSCH PC is in use by the UE or not.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Enhanced DSCH PC Indicator			ENUMERATED ( Enhanced DSCH PC Active in the UE, Enhanced DSCH PC not Active in the UE)	

### 9.2.2.13H Enhanced DSCH PC Wnd

The Enhanced DSCH PC Wnd parameter shows the window size to decide primary or non-primary cell, see ref. [10] subclause 5.2.2.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Enhanced DSCH PC Wnd			INTEGER (1..10)	

### 9.2.2.13I Enhanced DSCH Power Offset

The Enhanced DSCH Power Offset parameter gives the power offset to be added on DSCH when cell is decided to be primary.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Enhanced DSCH Power Offset			INTEGER (-15..0)	Unit: dB Range: -15 .. 0 dB Step: 1 dB

#### [9.2.2.13Ia E- RGCH/E-HICH Code Information](#)

[This parameter defines the codes which will be assigned for E- RGCH and E-HICH.](#)

<a href="#">IE/Group Name</a>	<a href="#">Presence</a>	<a href="#">Range</a>	<a href="#">IE Type and Reference</a>	<a href="#">Semantics Description</a>
<a href="#">CHOICE_replacremove</a>	<a href="#">M</a>			
<a href="#">&gt;replace</a>				
<a href="#">&gt;&gt;E-RGCH/E-HICH Code</a>		<a href="#">1..&lt;Maxno ofERGCH EHICHs&gt;</a>		
<a href="#">&gt;&gt;&gt;Code Number</a>	<a href="#">M</a>		<a href="#">INTEGER (0..maxERGCH E HICHCodeNrComp-1)</a>	
<a href="#">&gt;remove</a>			<a href="#">NULL</a>	

<a href="#">Range Bound</a>	<a href="#">Explanation</a>
<a href="#">MaxnoofERGCH E HICHs</a>	<a href="#">Maximum number of E-RGCH/E-HICH channelisation codes for one cell.</a>
<a href="#">MaxERGCH E HICHCodeNrComp</a>	<a href="#">Maximum number of codes at the defined spreading factor, within the complete code tree</a>

#### [9.2.2.13Ib E- AGCH Code Information](#)

[This parameter defines the codes which will be assigned for E- AGCH.](#)

<u>IE/Group Name</u>	<u>Presence</u>	<u>Range</u>	<u>IE Type and Reference</u>	<u>Semantics Description</u>
<u>CHOICE <i>replaceremove</i></u>	<u>M</u>			
<u>&gt;<i>replace</i></u>				
<u>&gt;&gt;E-AGCH Code</u>		<u>1..&lt;Maxno ofEAGCHs &gt;</u>		
<u>&gt;&gt;&gt;Code Number</u>	<u>M</u>		<u>INTEGER (0..maxEAGCHCode NrComp-1)</u>	
<u>&gt;<i>remove</i></u>			<u>NULL</u>	

<u>Range Bound</u>	<u>Explanation</u>
<u>MaxnoofEAGCHs</u>	<u>Maximum number of E-AGCH channellisation codes for one cell.</u>
<u>MaxEAGCHCodeNrComp</u>	<u>Maximum number of codes at the defined spreading factor, within the complete code tree</u>

### 9.2.2.14 FDD DL Channelisation Code Number

The DL Channelisation Code Number indicates the DL Channelisation Code number for a specific DL physical channel.

<b>IE/Group Name</b>	<b>Presence</b>	<b>Range</b>	<b>IE Type and Reference</b>	<b>Semantics Description</b>
FDD DL ChannelisationCode Number			INTEGER (0..511)	According to the mapping in [9]. The maximum value is equal to the DL spreading factor -1.

### 9.2.2.14A FDD DL Code Information

The *FDD DL Code Information* IE provides DL Code information for the RL.

<b>IE/Group Name</b>	<b>Presence</b>	<b>Range</b>	<b>IE Type and Reference</b>	<b>Semantics Description</b>
<b>FDD DL Code Information</b>		<u>1..&lt;maxno ofCodes&gt;</u>		
>DL Scrambling Code	M		9.2.2.13	
>FDD DL Channelisation Code Number	M		9.2.2.14	
>Transmission Gap Pattern Sequence Code Information	O		9.2.2.53B	

<b>Range Bound</b>	<b>Explanation</b>
<u>maxnoofCodes</u>	Maximum number of DL code information

### 9.2.2.15 FDD SCCPCH Offset

The Secondary CCPCH offset is defined as the time offset towards the Primary CCPCH in the cell. The offset is a multiple of 256 chips.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
FDD SCCPCH Offset			INTEGER (0..149)	Unit: chip Range: 0..38144 chips Step: 256 chips See ref. [7]

### 9.2.2.16 FDD TPC DL Step Size

This parameter indicates step size for the DL power adjustment.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
FDD TPC Downlink Step Size			ENUMERATED (0.5, 1, 1.5, 2,...)	Unit: dB

### 9.2.2.16A First RLS Indicator

The *First RLS Indicator* IE indicates if a specific Radio Link and all Radio Links which are part of the same Radio Link Set, shall be considered as the first radio links established towards the UE or not.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
First RLS Indicator			ENUMERATED ( First RLS, Not First RLS, ...)	

### 9.2.2.17 Gap Period

Void.

### 9.2.2.18 Gap Position Mode

Void.

### 9.2.2.18A Limited Power Increase

The parameter is used for a more efficient use of the inner loop DL power control for non real time data.

If the limited power increase is used, the Node B shall use the limited power increase algorithm as specified in [10], subclause 5.2.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Limited Power Increase			ENUMERATED ( Used, Not Used )	

### 9.2.2.18B Inner Loop DL PC Status

The *Inner Loop DL PC Status* IE indicates whether inner loop DL control shall be active or inactive for all radio links associated with the context identified by the *Node B Communication Context Id* IE.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Inner Loop DL PC Status			ENUMERATED (Active, Inactive)	

### 9.2.2.18C IPDL FDD Parameters

The *IPDL FDD Parameters* IE provides information about IPDL to be applied for FDD when activated.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
IP SpacingFDD	M		ENUMERATED (5, 7, 10, 15, 20, 30, 40, 50,...)	See [10]
IP Length	M		ENUMERATED (5, 10)	See [10]
Seed	M		INTEGER (0..63)	See [10]
Burst Mode Parameters	O		9.2.1.5A	
IP Offset	M		INTEGER (0..9)	See [10]

### 9.2.2.18D HS-DSCH FDD Information

The *HS-DSCH FDD Information* IE is used for initial addition of HS-DSCH information to a Node B Communication Context.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
HS-DSCH MAC-d Flows Information	M		9.2.1.31IA	
<b>UE Capabilities Information</b>				
>HS-DSCH Physical Layer Category	M		9.2.1.31Ia	
MAC-hs Reordering Buffer Size for RLC-UM	M		9.2.1.38Ab	
CQI Feedback Cycle k	M		9.2.2.21B	
CQI Repetition Factor	C-CQICyclek		9.2.2.4Cb	
ACK-NACK Repetition Factor	M		9.2.2.a	
CQI Power Offset	M		9.2.2.4Ca	
ACK Power Offset	M		9.2.2.b	
NACK Power Offset	M		9.2.2.23a	
HS-SCCH Power Offset	O		9.2.2.18I	
Measurement Power Offset	O		9.2.2.21C	

Condition	Explanation
CQICyclek	The IE shall be present if the <i>CQI Feedback Cycle k</i> IE is set to a value greater than 0.

### 9.2.2.18E HS-DSCH FDD Information Response

The *HS-DSCH Information Response* provides information for HS-DSCH that have been established or modified. It also provides additional HS-DSCH information determined within the Node B.



IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
<b>HS-DSCH MAC-d Flow Specific Information Response</b>		<i>0..&lt;maxno ofMACdFlows&gt;</i>		
>HS-DSCH MAC-d Flow ID	M		9.2.1.31I	
>Binding ID	O		9.2.1.4	
>Transport Layer Address	O		9.2.1.63	
>HS-DSCH Initial Capacity Allocation	O		9.2.1.31Ha	
<b>HS-SCCH Specific Information Response</b>		<i>0..&lt;maxno ofHSSCCHcodes&gt;</i>		
>Code Number	M		INTEGER (0..127)	
<b>CHOICE HARQ Memory Partitioning</b>	O			
>Implicit				
>>Number of Processes	M		INTEGER (1..8,...)	For HARQ process IDs going from 0 to "Number of Processes" – 1 the Total number of soft channel bits [33] is partitioned equally between all HARQ processes according to the rules in [18].
>Explicit				
>>HARQ Memory Partitioning Information		<i>1..&lt;maxno ofHARQprocesses&gt;</i>		The first instance of the parameter corresponds to HARQ process with identifier 0, the second instance to HARQ process with identifier 1, and so on.
>>>Process Memory Size	M		9.2.1.49D	See [18]

Range Bound	Explanation
<i>maxnoofMACdFlows</i>	Maximum number of HS-DSCH MAC-d flows
<i>maxnoofHSSCCHcodes</i>	Maximum number of HS-SCCH codes
<i>MaxnoofHARQprocesses</i>	Maximum number of HARQ processes for one UE

### 9.2.2.18Ea HS-DSCH FDD Update Information

The *HS-DSCH FDD Update Information* IE provides information for HS-DSCH to be updated. At least one IE shall be present.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
HS-SCCH Code Change Indicator	O		9.2.1.31K	
CQI Feedback Cycle k	O		9.2.2.21B	
CQI Repetition Factor	O		9.2.2.4Cb	
ACK-NACK Repetition Factor	O		9.2.2.a	
CQI Power Offset	O		9.2.2.4Ca	
ACK Power Offset	O		9.2.2.b	
NACK Power Offset	O		9.2.2.23a	

### 9.2.2.18F HS-PDSCH FDD Code Information

This parameter defines the codes which will be assigned for HS-PDSCHs.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Number Of HS-PDSCH Codes	M		INTEGER (0..maxHS-PDSCHCodeNrComp-1)	
Start Code Number	C-NumCodes		INTEGER (1..maxHS-PDSCHCodeNrComp-1)	

Condition	Explanation
NumCodes	The IE shall be present if the <i>Number Of HS-PDSCH Codes</i> IE is set to a value greater than 0.

Range Bound	Explanation
MaxHS-PDSCHCodeNrComp	Maximum number of codes at the defined spreading factor, within the complete code tree

### 9.2.2.18G HS-SCCH FDD Code Information

This parameter defines the codes which will be assigned for HS-SCCH. The Node B will assign codes for HS-SCCHs among these codes when it sets up a HS-DSCH.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
CHOICE <i>replaceremove</i>	M			
> <i>replace</i>				
>>HS-SCCH Code		1..<Maxno ofHSSCC Hs>		
>>>Code Number	M		INTEGER (0..maxHS-SCCHCodeNrComp-1)	
> <i>remove</i>			NULL	

Range Bound	Explanation
MaxnoofHSSCCs	Maximum number of HS-SCCHs for one cell.
MaxHS-SCCHCodeNrComp	Maximum number of codes at the defined spreading factor, within the complete code tree

### 9.2.2.18H HS-SCCH ID

Void.

### 9.2.2.18I HS-SCCH Power Offset

The *HS-SCCH Power Offset* IE indicates the Power offset relative to the pilot bits on the DL DPCCH.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
HS-SCCH Power Offset			INTEGER (0...255)	Unit: dB Range: -32 .. +31.75 dB Step: 0.25 dB

### 9.2.2.19 Max Adjustment Period

Void.

### 9.2.2.20 Max Adjustment Step

Defines the maximum allowed value for the change of DL power level during a certain number of slots that can be utilised by the downlink power balancing algorithm. *Max Adjustment Step* IE defines a time period, in terms of number of slots, in which the accumulated power adjustment shall be maximum 1dB. This value does not include the DL inner loop PC adjustment.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Max Adjustment Step			INTEGER (1..10)	Unit: Slots

### 9.2.2.20A Max Number Of PCPCHs

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Max Number Of PCPCHs			INTEGER (1..64,...)	

### [9.2.2.20B Max Number Of UL E-DPDCHs](#)

[Maximum number of uplink E-DPDCHs during the connection. Needed by the rate matching algorithm.](#)

<a href="#">IE/Group Name</a>	<a href="#">Presence</a>	<a href="#">Range</a>	<a href="#">IE Type and Reference</a>	<a href="#">Semantics Description</a>
<a href="#">Max Number Of UL E-DPDCHs</a>			<a href="#">ENUMERATED (1, 2, 4, ...)</a>	

### 9.2.2.21 Maximum Number Of UL DPDCHs

Maximum number of uplink DPDCHs to be used during the connection. Needed by the rate matching algorithm.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Max Number Of UL DPDCHs			INTEGER (1..6)	

### 9.2.2.21A Maximum PDSCH Power

The *Maximum PDSCH Power* IE can contain for each a PDSCH SF a maximum PDSCH power. The maximum PDSCH power shall be applied for each individual channelisation code at the concerning SF when used for a PDSCH.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Maximum PDSCH Power SF4	O		DL Power 9.2.1.21	
Maximum PDSCH Power SF8	O		DL Power 9.2.1.21	
Maximum PDSCH Power SF16	O		DL Power 9.2.1.21	
Maximum PDSCH Power SF32	O		DL Power 9.2.1.21	
Maximum PDSCH Power SF64	O		DL Power 9.2.1.21	
Maximum PDSCH Power SF128	O		DL Power 9.2.1.21	
Maximum PDSCH Power SF256	O		DL Power 9.2.1.21	

## 9.2.2.21B CQI Feedback Cycle k

The *CQI Feedback Cycle k* IE provides the duration of the CQI feedback cycle.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
CQI Feedback Cycle k			ENUMERATED (0, 2, 4, 8, 10, 20, 40, 80, 160,...)	Unit ms

## 9.2.2.21C Measurement Power Offset

The *Measurement Power Offset* IE is used as described in ref [10] subclause 6A.2.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
<i>Measurement Power Offset</i>			INTEGER (-12..26)	Unit: dB Range: -6..13dB Step: 0.5dB

## 9.2.2.22 Minimum UL Channelisation Code Length

Minimum UL channelisation code length (spreading factor) of a DPDCH which is used during the connection. Needed by rate matching algorithm.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Min UL Channelisation Code Length			ENUMERATED (4, 8, 16, 32, 64, 128, 256,...)	

9.2.2.22a [Minimum UL Channelisation Code Length For E-DCH FDD](#)

[Minimum UL channelisation code length \(spreading factor\) of a E-DPDCH during the connection. Needed by rate matching algorithm.](#)

<a href="#">IE/Group Name</a>	<a href="#">Presence</a>	<a href="#">Range</a>	<a href="#">IE Type and Reference</a>	<a href="#">Semantics Description</a>
<a href="#">Min UL Channelisation Code Length for E-DCH</a>			<a href="#">ENUMERATED (2, 4, 8, 16, 32, 64, ...)</a>	

## 9.2.2.23 Multiplexing Position

Multiplexing Position specifies whether fixed or flexible positions of transport channels shall be used in the physical channel.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Multiplexing Position			ENUMERATED ( Fixed, Flexible)	

## 9.2.2.23a NACK Power Offset

The *NACK Power Offset* IE indicates Power offset used in the UL between the HS-DPCCH slot carrying HARQ NACK information and the associated DPCCH.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
NACK Power Offset			INTEGER (0..8,...)	According to mapping in ref. [9] subclause 4.2.1.

### 9.2.2.23A N\_EOT

The N\_EOT is defined as number of End of Transmission for release of PCPCH transmission.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
N_EOT			INTEGER (0..8)	Unit: TTI Value "8" is never used in this release.

### 9.2.2.23B NF\_max

The NF\_max is defined as maximum number of Frame in a PCPCH message data part.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
NF_max			INTEGER (1..64,...)	

### 9.2.2.23C N\_Start\_Message

The N\_Start\_Message is defined as number of Frames for start message of DL DPDCHs for a CPCH.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
N_Start_Message			INTEGER (1..8)	

### 9.2.2.23D Number Of Reported Cell Portions

Number of Reported Cell Portions indicates the number of Best Cell Portions values which shall be included in the measurement report.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Number Of Reported Cell Portions			INTEGER (1..64,...)	

### 9.2.2.24 Pattern Duration (PD)

Void.

### 9.2.2.24A PCP Length

Indicates CPCH power control preamble length.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
PCP Length			ENUMERATED (0, 8)	

### 9.2.2.25 PDSCH Code Mapping

This IE indicates the association between each possible value of TFCI(field 2) and the corresponding PDSCH channelisation code(s). There are three fundamentally different ways that the UTRAN must choose between in order to signal the mapping information, these are described below. The signalling capacity consumed by the different methods will vary depending on the way in which the UTRAN configures usage of the DSCH. A fourth option is also provided which allows the UTRAN to replace individual entries in the TFCI(field 2) to PDSCH code mapping table with new PDSCH code values.

#### Method #1 - Using code range

The mapping is described in terms of a number of groups, each group associated with a given spreading factor. Each TFCI(field2) value corresponds to a given PDSCH channelisation code or set of PDSCH codes for multi-code. The Node B maps TFCI(field2) values to PDSCH codes in the following way:

- The PDSCH codes used for TFCI(field 2) = 0 are given by the SF of the Code Group 1 (i.e. first instance in *PDSCH Code Mapping*) and the code numbers between CodeNumber<sub>0</sub> (where CodeNumber<sub>0</sub> = "Start Code Number" of Code Group 1) and CodeNumber<sub>0</sub> + "Multi-Code Info" - 1.
- This continues with unit increments in the value of TFCI (Field2) mapped to either unit increments in code numbers or groups of contiguous code numbers in case of multi-code, this until "Stop Code Number" is reached: So the PDSCH codes used for TFCI(field 2) = k (for k > 0 and k < ("Stop Code Number" - "Start Code Number" + 1) DIV k) are given by the SF of the Code Group 1 and the code numbers between CodeNumber<sub>k</sub> = CodeNumber<sub>k-1</sub> + "Multi-Code Info" and CodeNumber<sub>k</sub> + "Multi-Code Info" - 1. If "Stop Code Number" = "Start Code Number" + "Multi-Code Info" - 1 then this is to be interpreted as defining the mapping between the channelisation code(s) and a single TFCI.
- The Node B constructs its mapping table by repeating this process for all the Code Groups in the order they are instantiated in *PDSCH Code Mapping*. The first TFCI(field 2) value used in each group is the largest TFCI(field 2) value reached in the previous group incremented by one.

Note: This imposes that "Stop Code Number" - "Start Code Number" + 1 is a multiple of the value "Multi-Code Info" for each instance of *PDSCH Code Mapping*. Furthermore, in the case where multi-code is not used, then "Multi-Code Info" = 1 and the process above also applies.

#### Method #2 - Using TFCI range

The mapping is described in terms of a number of groups, each group corresponding to a given PDSCH channelisation code or codes for multicode.

- The set of PDSCH codes specified in the first instance applies for all values of TFCI(field 2) between 0 and the specified "Max TFCI(field2)".
- The process continues in the same way for the following groups with the TFCI(field 2) value starting at the largest value reached in the previous instance incremented by one. So the set of PDSCH codes specified in a given instance apply for all the values of TFCI(field 2) between the "Max TFCI(field2) value" specified in the previous instance incremented by one and the specified "Max TFCI(field2)" of the considered instance.

A set of PDSCH codes is composed of all the codes between "Code Number" and "Code Number" + "Multi-Code Info" - 1. So if multi-code is not used, the set of PDSCH codes is reduced to one element indicated by the *Code Number* IE.

#### Method #3 - Explicit

The mapping between TFCI(field 2) value and PDSCH channelisation code (or a set of PDSCH codes for multicode) is spelt out explicitly for each value of TFCI (field2).

A set of PDSCH codes is composed of all the codes between "Code Number" and "Code Number" + "Multi-Code Info" - 1. So if multi-code is not used, the set of PDSCH codes is reduced to one element indicated by the *Code Number* IE.

#### Method #4 - Replace

The "TFCI (field2)" value(s) for which the mapping to PDSCH channelisation code (or a set of PDSCH codes for multicode) is changed are explicitly signalled. Furthermore, the new mapping between TFCI(field 2) value and PDSCH channelisation code(s) is spelt out explicitly for each value of TFCI (field2).

A set of PDSCH codes is composed of all the codes between "Code Number" and "Code Number" + "Multi-Code Info" - 1. So if multi-code is not used, the set of PDSCH codes is reduced to one element indicated by the *Code Number* IE.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
DL Scrambling Code	M		9.2.2.13	Scrambling code on which PDSCH is transmitted.
<i>CHOICE Signalling Method</i>	M			
<i>&gt;Code Range</i>				
<b>&gt;&gt;PDSCH Code Mapping</b>		<i>1..&lt;maxNo CodeGroups&gt;</i>		
>>>Spreading Factor	M		ENUMERATED (4, 8, 16, 32, 64, 128, 256,...)	
>>>Multi-Code Info	M		INTEGER (1..16)	
>>>Start Code Number	M		INTEGER (0..maxCodeNumComp-1)	PDSCH code start, Numbering as described in [18]. The maximum value is equal to the Spreading Factor - 1.
>>>Stop Code Number	M		INTEGER (0..maxCodeNumComp-1)	PDSCH code stop, Numbering as described in [18]. The maximum value is equal to the Spreading Factor - 1.
<i>&gt;TFCI Range</i>				
<b>&gt;&gt;DSCH Mapping</b>		<i>1..&lt;maxNo TFCIGroups&gt;</i>		
>>>Max TFCI(field2) Value	M		INTEGER (1..1023)	This is the maximum value in the range of TFCI(field 2) values for which the specified PDSCH code applies
>>>Spreading Factor	M		ENUMERATED (4, 8, 16, 32, 64, 128, 256,...)	SF of PDSCH code
>>>Multi-Code Info	M		INTEGER (1..16)	
>>>Code Number	M		INTEGER (0..maxCodeNumComp-1)	Code number of PDSCH code. Numbering as described in [18]. The maximum value is equal to the Spreading Factor - 1.
<i>&gt;Explicit</i>				
<b>&gt;&gt;PDSCH Code</b>		<i>1..&lt;maxTFCI_2_Combos&gt;</i>		The first instance of the parameter PDSCH code corresponds to TFCI (field2) = 0, the second to TFCI(field 2) = 1 and so on.
>>>Spreading Factor	M		ENUMERATED (4, 8, 16, 32, 64, 128, 256,...)	SF of PDSCH code
>>>Multi-Code Info	M		INTEGER (1..16)	
>>>Code Number	M		INTEGER (0..maxCodeNumComp-1)	Code number of PDSCH code. Numbering as described in [18]. The maximum value is equal to the Spreading Factor - 1.
<i>&gt;Replace</i>				
<b>&gt;&gt;Replaced PDSCH Code</b>		<i>1..&lt;maxTFCI_2_Combos&gt;</i>		
>>>TFCI (field2)	M		INTEGER (0..1023)	Value of TFCI(field 2) for which PDSCH code mapping will be changed
>>>Spreading Factor	M		ENUMERATED (4, 8, 16, 32, 64, 128, 256,...)	SF of PDSCH code
>>>Multi-Code Info	M		INTEGER (1..16)	
>>>Code Number	M		INTEGER (0..maxCodeNumComp-1)	Code number of PDSCH code. Numbering as described in [18].



				The maximum value is equal to the Spreading Factor - 1.
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Range Bound	Explanation
maxCodeNumComp	Maximum number of codes at the defined spreading factor, within the complete code tree.
maxTFCI_2_Combs	Maximum number of TFCI (field 2) combinations (given by 2 raised to the power of the length of the TFCI field 2)
maxNoTFCIGroups	Maximum number of groups, each group described in terms of a range of TFCI(field 2) values for which a single PDSCH code applies.
maxNoCodeGroups	Maximum number of groups, each group described in terms of a range of PDSCH channelisation code values for which a single spreading factor applies.

### 9.2.2.26 PICH Mode

The number of paging indicators (PIs) in a PICH frame.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
PICH Mode			ENUMERATED (18, 36, 72, 144,...)	Number of PIs per frame

### 9.2.2.27 Power Adjustment Type

Defines the characteristic of the power adjustment.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Power Adjustment Type			ENUMERATED (None, Common, Individual)	

### 9.2.2.28 Power Control Mode

Void.

### 9.2.2.29 Power Offset

This IE defines a power offset relative to the Downlink transmission power of a DPDCH or a Secondary CCPCH data field or a DL-DPCCH for CPCH pilot field..

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Power Offset			INTEGER (0..24)	Unit: dB Range: 0..6 dB Step: 0.25 dB

## 9.2.2.29A Power\_Raise\_Limit

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Power_Raise_Limit			INTEGER (0..10)	Unit: dB Range: 0..10 dB Step: 1 dB

## 9.2.2.30 Power Resume Mode

Void.

## 9.2.2.31 Preamble Signature

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Preamble Signatures			BIT STRING (16)	Each bit indicates availability for a signature, where the signatures are numbered "signature 0" up to "signature 15". The value 1 of a bit indicates that the corresponding signature is available and the value 0 that it is not available. The order of bits is to be interpreted according to subclause 9.3.4. See also [9].

## 9.2.2.32 Preamble Threshold

The IE sets the threshold for preamble detection. The ratio between received preamble power during the preamble period and interference level shall be above this threshold in order to be acknowledged.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Preamble Threshold			INTEGER (0..72)	Unit: dB Range: -36 .. 0 dB Step: 0.5 dB

## 9.2.2.33 Primary CPICH Power

The Primary CPICH power is the power that shall be used for transmitting the P-CPICH in a cell. The reference point is the antenna connector. If Transmit Diversity is applied to the Primary CPICH, the Primary CPICH power is the linear sum of the power that is used for transmitting the Primary CPICH on all branches.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Primary CPICH Power			INTEGER (-100..500)	Value = Primary CPICH Power/10 Unit: dBm Range: -10.0..+50.0 dBm Step: 0.1 dB

### 9.2.2.33A Primary CPICH Usage For Channel Estimation

The *Primary CPICH Usage For Channel Estimation* IE indicates whether the Primary CPICH may be used for channel estimation or not.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Primary CPICH Usage For Channel Estimation			ENUMERATED ( Primary CPICH may be used, Primary CPICH shall not be used)	

### 9.2.2.34 Primary Scrambling Code

The Primary scrambling code to be used in the cell.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Primary Scrambling Code			INTEGER (0..511)	

### 9.2.2.35 Propagation Delay

The Propagation delay is the one-way propagation delay of the radio signal from the MS to the Node B.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Propagation Delay			INTEGER (0..255)	Unit: chip Range: 0..765 chips Step: 3 chips

### 9.2.2.36 QE-Selector

Void.

### 9.2.2.36A Qth Parameter

This parameter indicates the Quality threshold for reliable detection of Primary Cell ID in SSDT [10].

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Qth Parameter			INTEGER (-20..0)	Unit: dB Range: - 20 .. 0 dB Step: 1 dB

### 9.2.2.37 RACH Slot Format

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
RACH Slot Format			ENUMERATED (0..3,...)	See ref. [7].

## 9.2.2.38 RACH Sub Channel Numbers

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
RACH Sub Channel Numbers			BIT STRING (12)	Each bit indicates availability for a subchannel, where the subchannels are numbered "subchannel 0" to "subchannel 11". The value 1 of a bit indicates that the corresponding subchannel is available and the value 0 indicates that it is not available. The order of bits is to be interpreted according to subclause 9.3.4.

## 9.2.2.39 RL Set ID

The RL Set ID uniquely identifies one RL Set within a Node B Communication Context.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
RL Set ID			INTEGER (0..31)	

## 9.2.2.39A Received Total Wide Band Power

The Received total wide band power indicates the UL interference at a certain cell under CRNC, see ref. [4].

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Received Total Wide Band Power			INTEGER (0..621)	According to mapping in [22].

## 9.2.2.40 S-Field Length

The UE uses the S Field of the UL DPCCH slot to send the SSTD Cell ID to the network.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
S Field Length			ENUMERATED (1, 2,...)	

## 9.2.2.41 Scrambling Code Change

Void.

## 9.2.2.42 Scrambling Code Number

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Scrambling Code Number			INTEGER (0..15)	Identification of scrambling code see ref. [9].

## 9.2.2.43 Secondary CCPCH Slot Format

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Secondary CCPCH Slot Format			INTEGER (0..17,...)	

## 9.2.2.43A Secondary CPICH Information Change

The *Secondary CPICH Information Change* IE indicates modification of information of the Secondary CPICH for channel estimation.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
CHOICE <i>Secondary CPICH Information Change</i>	M			
> <i>New Secondary CPICH</i>				
>>Secondary CPICH Information	M		Common Physical Channel ID 9.2.1.13	
> <i>Secondary CPICH Shall Not Be Used</i>			NULL	

## 9.2.2.44 SS DT Cell Identity

The SS DT Cell ID is a temporary ID for SS DT assigned to a cell.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
SS DT Cell Identity			ENUMERATED (a, b,..., h)	

## 9.2.2.44A SS DT Cell Identity For EDSCHPC

The SS DT Cell Identity for EDSCHPC is a temporary ID for enhanced DSCH power control assigned to a cell.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
SS DT Cell Identity For EDSCHPC			SS DT Cell Identity 9.2.2.44	

## 9.2.2.45 SS DT Cell ID Length

The SS DT Cell ID Length parameter shows the length of the SS DT Cell ID.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Cell ID Length			ENUMERATED (Short, Medium, Long)	

## 9.2.2.46 SS DT Support Indicator

The SS DT Support Indicator indicates whether a RL supports SS DT or not.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
SSDT Support Indicator			ENUMERATED (SSDT Supported, SSDT Not Supported)	

#### 9.2.2.47 SSDT Indication

The SSDT Indication indicates whether SSDT is in use by the UE or not.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
SSDT Indication			ENUMERATED (SSDT Active in the UE, SSDT Not Active in the UE)	

#### 9.2.2.48 STTD Indicator

Indicates if STTD shall be active or not.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
STTD Indicator			ENUMERATED (active, inactive, ...)	

#### 9.2.2.49 T Cell

Timing delay used for defining start of SCH, CPICH and the DL scrambling code(s) in a cell relative BFN. Resolution 256 chips.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
T Cell			ENUMERATED (0, 1,...,9)	Unit: chip Range: 0..2304 chips Step: 256 chips See ref. [17]

#### 9.2.2.49A TFCI2 Bearer Information Response

The *TFCI2 Bearer Information Response* IE provides information for TFCI2 bearer that have been established or modified.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Binding ID	M		9.2.1.4	
Transport Layer Address	M		9.2.1.63	

#### 9.2.2.50 TFCI Signalling Mode

This parameter indicates if the normal or split mode is used for the TFCI. In the event that the split mode is to be used then the IE indicates whether the split is "Hard" or "Logical", and in the event that the split is "Logical" the IE indicates the number of bits in TFCI (field 2).

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
TFCI Signalling Option	M		ENUMERATED ( Normal, Split)	"Normal" : meaning no split in the TFCI field (either "Logical" or "Hard") "Split" : meaning there is a split in the TFCI field (either "Logical" or "Hard")
Split Type	C-IfSplit		ENUMERATED ( Hard, Logical)	"Hard" : meaning that TFCI (field 1) and TFCI (field 2) are block coded separately. "Logical" : meaning that on the physical layer TFCI (field 1) and TFCI (field 2) are concatenated, field 1 taking the most significant bits and field 2 taking the least significant bits). The whole is then encoded with a single block code.
Length Of TFCI2	O		INTEGER (1..10)	This IE indicates the length measured in number of bits of TFCI (field2).

Condition	Explanation
IfSplit	The IE shall be present if the <i>TFCI Signalling Option</i> IE is set to "Split".

### 9.2.2.51 TGD

Void.

### 9.2.2.52 TGL

Void.

### 9.2.2.53 Transmit Diversity Indicator

The Transmit Diversity Indicator indicates whether transmit diversity shall be active or not.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Transmit Diversity Indicator			ENUMERATED ( active, inactive)	

### 9.2.2.53A Transmission Gap Pattern Sequence Information

Defines the parameters for the compressed mode gap pattern sequence. For details see ref. [18].

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
<b>Transmission Gap Pattern Sequence Information</b>		<i>1..&lt;maxTGPS&gt;</i>		
>TGPS Identifier	M		INTEGER (1..maxTGPS)	Transmission Gap Pattern Sequence Identifier: Establish a reference to the compressed mode pattern sequence. Up to <maxTGPS> simultaneous compressed mode pattern sequences can be used.
>TGSN	M		INTEGER (0..14)	Transmission Gap Starting Slot Number: The slot number of the first transmission gap slot within the TGCFN.
>TGL1	M		INTEGER (1..14)	The length of the first Transmission Gap within the transmission gap pattern expressed in number of slots.
>TGL2	O		INTEGER (1..14)	The length of the second Transmission Gap within the transmission gap pattern. If omitted, then TGL2=TGL1.
>TGD	M		INTEGER (0, 15.. 269)	Transmission Gap Distance: indicates the number of slots between the starting slots of two consecutive transmission gaps within a transmission gap pattern. If there is only one transmission gap in the transmission gap pattern, this parameter shall be set to "0" ("0" =undefined).
>TGPL1	M		INTEGER (1..144,...)	The duration of transmission gap pattern 1 in frames.
>TGPL2	O		INTEGER (1..144,...)	The duration of transmission gap pattern 2 in frames. If omitted, then TGPL2=TGPL1.
>UL/DL Mode	M		ENUMERATED ( UL only, DL only, UL/DL)	Defines whether only DL, only UL or combined UL/DL compressed mode is used.
>Downlink Compressed Mode Method	C-DL		ENUMERATED ( Puncturing, SF/2, Higher Layer Scheduling, ...)	Method for generating downlink compressed mode gap
>Uplink Compressed Mode Method	C-UL		ENUMERATED ( SF/2, Higher Layer Scheduling, ...)	Method for generating uplink compressed mode gap.
>Downlink Frame Type	M		ENUMERATED (A, B,...)	Defines if frame structure type "A" or "B" shall be used in downlink compressed mode.
>DeltaSIR1	M		INTEGER (0..30)	Delta in SIR target value to be set in the Node B during the frame containing the start of the first transmission gap in the transmission gap pattern (without including the effect of the bit-rate increase). Unit: dB Range: 0..3 dB



				Step: 0.1 dB
>DeltaSIRafter1	M		INTEGER (0..30)	Delta in SIR target value to be set in the Node B one frame after the frame containing the start of the first transmission gap in the transmission gap pattern. Unit: dB Range: 0..3 dB Step: 0.1 dB
>DeltaSIR2	O		INTEGER (0..30)	Delta in SIR target value to be set in the Node B during the frame containing the start of the second transmission gap in the transmission gap pattern (without including the effect of the bit-rate increase). When omitted, DeltaSIR2 = DeltaSIR1. Unit: dB Range: 0..3 dB Step: 0.1 dB
>DeltaSIRafter2	O		INTEGER (0..30)	Delta in SIR target value to be set in the Node B one frame after the frame containing the start of the second transmission gap in the transmission gap pattern. When omitted, DeltaSIRafter2 = DeltaSIRafter1. Unit: dB Range: 0..3 dB Step: 0.1 dB

Condition	Explanation
UL	The IE shall be present if the <i>UL/DL mode</i> IE is set to "UL only" or "UL/DL".
DL	The IE shall be present if the <i>UL/DL mode</i> IE is set to "DL only" or "UL/DL".

Range Bound	Explanation
<i>maxTGPS</i>	Maximum number of transmission gap pattern sequences

### 9.2.2.53B Transmission Gap Pattern Sequence Code Information

This IE indicates whether the alternative scrambling code shall be used for the Downlink compressed mode method or not in the Transmission Gap Pattern Sequence. For details see [9].

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Transmission Gap Pattern Sequence Code Information			ENUMERATED ( Code Change, No Code Change)	Indicates whether the alternative scrambling code is used for compressed mode method "SF/2".

### 9.2.2.54 UL/DL compressed mode selection

Void.

## 9.2.2.55 UL delta SIR

Void.

## 9.2.2.56 UL delta SIR after

Void.

## 9.2.2.57 UL DPCCH Slot Format

Indicates the slot format used in DPCCH in UL, according to ref. [7].

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
UL DPCCH Slot Format			INTEGER (0..5,...)	

## 9.2.2.58 UL SIR

Void.

## 9.2.2.59 UL Scrambling Code

The UL Scrambling Code is the scrambling code used by UE. Every UE has its specific UL Scrambling Code.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
UL Scrambling Code Number	M		INTEGER (0..2 <sup>24</sup> -1)	
UL Scrambling Code Length	M		ENUMERATED (Short, Long)	

## 9.2.2.60 UL Capacity Credit

Void.

## 9.2.3 TDD specific Parameters

## 9.2.3.1 Block STTD Indicator

Void.

## 9.2.3.2 Burst Type

Void.

### 9.2.3.3 CCTrCH ID

The CCTrCH ID for dedicated and shared channels identifies unambiguously an uplink or downlink CCTrCH inside a Radio Link. For S-CCPCH, it identifies unambiguously a downlink CCTrCH within a cell.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
CCTrCH ID			INTEGER (0..15)	

### 9.2.3.4 Cell Parameter ID

The Cell Parameter ID identifies unambiguously the [3.84 Mcps TDD - Code Groups, Scrambling Codes, Midambles and Toffset] [1.28 Mcps TDD - SYNC-DL and SYNC-UL sequences, the scrambling codes and the midamble codes] (see ref. [20]).

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Cell Parameter ID			INTEGER (0..127,...)	

### 9.2.3.4A Constant Value

The Constant Value is the power margin used by a UE to set the proper uplink power for a DCH, USCH, or a RACH.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Constant Value			INTEGER (-10..10,...)	Unit: dB Range: -10 .. +10 dB Step: 1 dB.

### 9.2.3.4B DL Timeslot ISCP

The DL Timeslot ISCP is the measured interference in a downlink timeslot at the UE, see ref. [5].

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
DL Timeslot ISCP			INTEGER (0..91)	According to mapping in ref. [5].

### 9.2.3.4C DCH TDD Information

The *DCH TDD Information* IE provides information for DCHs to be established.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
<b>DCH TDD Information</b>		1..<maxno ofDCHs>			–	
>Payload CRC Presence Indicator	M		9.2.1.49		–	
>UL FP Mode	M		9.2.1.66		–	
>ToAWS	M		9.2.1.61		–	
>ToAWE	M		9.2.1.60		–	
<b>&gt;DCH Specific Info</b>		1..<maxno ofDCHs>			–	
>>DCH ID	M		9.2.1.20		–	
>>CCTrCH ID	M		9.2.3.3	UL CCTrCH in which the DCH is mapped	–	
>>CCTrCH ID	M		9.2.3.3	DL CCTrCH in which the DCH is mapped	–	
>>Transport Format Set	M		9.2.1.59	For UL	–	
>>Transport Format Set	M		9.2.1.59	For DL	–	
>>Allocation/Retention Priority	M		9.2.1.1A		–	
>>Frame Handling Priority	M		9.2.1.30		–	
>>QE-Selector	C-CoordCH		9.2.1.50A		–	
>>Unidirectional DCH Indicator	O		9.2.1.68		YES	reject
>TNL QoS	O		9.2.1.58A		YES	ignore

Condition	Explanation
CoordCH	The IE shall be present if this DCH is part of a set of coordinated DCHs (number of instances of the <i>DCH Specific Info</i> IE is greater than 1).

Range Bound	Explanation
maxnoofDCHs	Maximum number of DCHs for one UE

#### 9.2.3.4D DCHs TDD To Modify

The *DCHs TDD To Modify* IE provides information for DCHs to be modified.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
<b>DCHs TDD To Modify</b>		1..<maxno ofDCHs>			–	
>UL FP Mode	O		9.2.1.66		–	
>ToAWS	O		9.2.1.61		–	
>ToAWE	O		9.2.1.60		–	
>Transport Bearer Request Indicator	M		9.2.1.62A		–	
<b>&gt;DCH Specific Info</b>		1..<maxno ofDCHs>			–	
>>DCH ID	M		9.2.1.20		–	
>>CCTrCH ID	O		9.2.3.3	UL CCTrCH in which the DCH is mapped.	–	
>>CCTrCH ID	O		9.2.3.3	DL CCTrCH in which the DCH is mapped	–	
>>Transport Format Set	O		9.2.1.59	For the UL.	–	
>>Transport Format Set	O		9.2.1.59	For the DL.	–	
>>Allocation/Retention Priority	O		9.2.1.1A		–	
>>Frame Handling Priority	O		9.2.1.30		–	
>TNL QoS	O		9.2.1.58A		YES	ignore

Range Bound	Explanation
<i>maxnoofDCHs</i>	Maximum number of DCHs for one UE

### 9.2.3.4E DL Timeslot Information

The *DL Timeslot Information* IE provides information for DL Time slot to be established.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
<b>DL Timeslot Information</b>		1..<maxno ofDLts>		
>Time Slot	M		9.2.3.23	
>Midamble Shift And Burst Type	M		9.2.3.7	
>TFCI Presence	M		9.2.1.57	
>DL Code Information	M		TDD DL Code Information 9.2.3.19B	

Range Bound	Explanation
<i>maxnoofDLts</i>	Maximum number of Downlink time slots per Radio Link

### 9.2.3.4F DL Time Slot ISCP Info

The *DL Time Slot ISCP Info* IE provides information for DL Interference level for each time slot within the Radio Link.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
<b>DL Time Slot ISCP Info</b>		<i>1..&lt;maxno ofDLts&gt;</i>		
>Time Slot	M		9.2.3.23	
>DL Timeslot ISCP	M		9.2.3.4B	

Range Bound	Explanation
<i>maxnoofDLts</i>	Maximum number of Downlink time slots per Radio Link for 3.84Mcps TDD.

### 9.2.3.4G Cell Sync Burst Code

The *Cell Sync Burst Code* IE indicates which Code is used for a given Cell Sync Burst.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Cell Sync Burst Code			INTEGER (0..7,...)	

### 9.2.3.4H Cell Sync Burst Code Shift

The *Cell Sync Burst Code Shift* IE indicates the number of code shifts used for a given Cell Sync Burst.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Cell Sync Burst Code Shift			INTEGER (0..7)	

### 9.2.3.4I CSB Measurement ID

The *Cell Sync Burst Measurement ID* IE uniquely identifies any cell synchronisation burst measurement per Node B Control Port.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
CSB Measurement ID			INTEGER (0..65535)	

### 9.2.3.4J Cell Sync Burst Repetition Period

The *Cell Sync Burst Repetition Period* IE represents the number of consecutive Radio Frames after which the cell synchronisation burst transmission/measurement is repeated. This means that if the Time Slot  $K$  is assigned to the cell synchronisation burst transmission/measurements in the Radio Frame  $J$ , the cell synchronisation burst transmission/measurement is also in all the Radio Frames  $J+n*Repetition\ Period$ .

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Cell Sync Burst Repetition Period			INTEGER (0..4095)	

### 9.2.3.4K Cell Sync Burst SIR

Indicates the Signal to Interference Ratio of the cell synchronisation burst measurement according definition in [5].

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Cell Sync Burst SIR			INTEGER (0..31)	According to mapping in [23]

### 9.2.3.4L Cell Sync Burst Timing

The *Cell Sync Burst Timing* IE defines the time of start (defined by the first detected path in time) of the cell synchronisation burst of a neighbouring cell see [5] for 3.84Mcps TDD.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
CHOICE <i>Phase</i>				According to mapping in [23]
> <i>Initial Phase</i>				
>>Cell Synch Burst Timing Value	M		INTEGER (0..1048575,...)	
> <i>Steady State Phase</i>				
>>Cell Synch Burst Timing Value	M		INTEGER (0..255,...)	

### 9.2.3.4La Cell Sync Burst Timing LCR

The *Cell Sync Burst Timing LCR* IE defines the time of start (defined by the first detected path in time) of the cell synchronisation burst of a neighbouring cell see [5] for 1.28Mcps TDD.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
CHOICE <i>Phase</i>				According to mapping in [23]
> <i>Initial Phase</i>				
>>Cell Synch Burst Timing Value	M		INTEGER (0..524287,...)	
> <i>Steady State Phase</i>				
>>Cell Synch Burst Timing Value	M		INTEGER (0..127,...)	

### 9.2.3.4M Cell Sync Burst Timing Threshold

The *Cell Sync Burst Timing Threshold* IE defines the threshold that shall trigger a CELL SYNCHRONISATION REPORT message.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Cell Sync Burst Timing Threshold			INTEGER (0..254)	Unit: chip Range: 0 .. 31.75 chips Step: 0.125 chip

### 9.2.3.4N CSB Transmission ID

The *Cell Sync Burst Transmisson ID* IE uniquely identifies any cell synchronisation burst transmission per Node B Control Port.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
CSB Transmission ID			INTEGER (0..65535)	

### 9.2.3.4O DL Timeslot Information LCR

The *DL Timeslot Information LCR* IE provides information for DL Time slot to be established.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
<b>DL Timeslot Information LCR</b>		$1..<maxnoofDLtsLCR>$			–	
>Time Slot LCR	M		9.2.3.24A		–	
>Midamble Shift LCR	M		9.2.3.7A		–	
>TFCI Presence	M		9.2.1.57		–	
>DL Code Information	M		TDD DL Code Information LCR 9.2.3.19C		–	
>Initial DL Transmission Power	O		DL Power 9.2.1.21	Initial power on DPCH	YES	ignore
>Maximum DL Power	O		DL Power 9.2.1.21	Maximum allowed power on DPCH	YES	ignore
>Minimum DL Power	O		DL Power 9.2.1.21	Minimum allowed power on DPCH	YES	ignore

Range Bound	Explanation
$maxnoofDLtsLCR$	Maximum number of Downlink time slots per Radio Link for 1.28Mcps TDD.

#### 9.2.3.4P DL Time Slot ISCP Info LCR

The *DL Time Slot ISCP Info LCR* IE provides information for DL Interference level for each time slot within the Radio Link.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
<b>DL Time Slot ISCP Info LCR</b>		$1..<maxnoofDLtsLCR>$		
>Time Slot LCR	M		9.2.3.24A	
>DL Timeslot ISCP	M		9.2.3.4B	

Range Bound	Explanation
$maxnoofDLtsLCR$	Maximum number of Downlink time slots per Radio Link for 1.28Mcps TDD.

#### 9.2.3.5 DPCH ID

The DPCH ID identifies unambiguously a DPCH inside a Radio Link.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
DPCH ID			INTEGER (0..239)	

#### 9.2.3.5A DSCH TDD Information

The *DSCH TDD Information* IE provides information for DSCHs to be established.



IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
<b>DSCH TDD Information</b>		<i>1..&lt;max noofDS CHs&gt;</i>			–	
>DSCH ID	M		9.2.1.27		–	
>CCTrCH ID	M		9.2.3.3	DL CCTrCH in which the DSCH is mapped	–	
>Transport Format Set	M		9.2.1.59	For DSCH	–	
>Allocation/Retention Priority	M		9.2.1.1A		–	
>Frame Handling Priority	M		9.2.1.30		–	
>ToAWS	M		9.2.1.61		–	
>ToAWE	M		9.2.1.60		–	
>Binding ID	O		9.2.1.4	Shall be ignored if bearer establishment with ALCAP.	YES	ignore
>Transport Layer Address	O		9.2.1.63	Shall be ignored if bearer establishment with ALCAP.	YES	ignore

Range Bound	Explanation
<i>MaxnoofDSCHs</i>	Maximum number of DSCH for one UE

### 9.2.3.5B DwPCH Power

DwPCH Power is the power that shall be used for transmitting the DwPCH in a cell. The reference point is the antenna connector. If Transmit Diversity is applied to the DwPCH, the DwPCH power is the linear sum of the power that is used for transmitting the DwPCH on all branches.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
DwPCH Power			INTEGER (-150..+400,...)	Unit: dBm Range: -15 ..+40 dBm Step: 0.1 dB

### 9.2.3.5C Frame Adjustment Value

The *Frame Adjustment Value* IE represents the frame number correction within the initial synchronisation phase.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Frame Adjustment Value			INTEGER (0..4095)	$SFN_{new}=(SFN_{old}+Frame Adjustment Value) \bmod 4096$

### 9.2.3.5D IPDL TDD Parameter

The *IPDL TDD Parameter* IE provides information about IPDL to be applied for 3.84Mcps TDD when activated.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
IP SpacingTDD	M		ENUMERATED (30, 40, 50, 70, 100, ...)	See [21]
IP Start	M		INTEGER (0..4095)	See [21]
IP Slot	M		INTEGER (0..14)	See [21]
IP PCCPCH	M		ENUMERATED (	See [21]

			Switch off 1 frame, Switch off 2 frames)	
Burst Mode parameters	O		9.2.1.5A	

### 9.2.3.5E Max FPACH Power

Max FPACH Power is the maximum power that shall be used for transmitting the FPACH in a cell. The reference point is the antenna connector. If Transmit Diversity is applied to the FPACH, the Max FPACH Power is maximum of the linear sum of the power that is allowed for transmitting the FPACH on all branches.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
FPACH Power			INTEGER (-150..+400,...)	Unit: dBm Range: -15 ..+40 dBm Step: 0.1 dB

### 9.2.3.5F HS-DSCH TDD Information

The *HS-DSCH TDD Information* IE is used for initial addition of HS-DSCH information to a Node B Communication Context.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
HS-DSCH MAC-d Flows Information	M		9.2.1.31IA	
<b>UE Capabilities Information</b>				
>HS-DSCH Physical Layer Category	M		9.2.1.31Ia	
MAC-hs Reordering Buffer Size for RLC-UM	M		9.2.1.38Ab	
TDD ACK NACK Power Offset	M		9.2.3.18F	

### 9.2.3.5G HS-DSCH TDD Information Response

The HS-DSCH TDD Information Response provides information for HS-DSCH MAC-d flows that have been established or modified. It also provides additional HS-DSCH information determined within the Node B.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
<b>HS-DSCH MAC-d Flow Specific Information Response</b>		<i>0..&lt;max noofMA CdFlows&gt;</i>			–	
>HS-DSCH MAC-d Flow ID	M		9.2.1.31I		–	
>Binding ID	O		9.2.1.4		–	
>Transport Layer Address	O		9.2.1.63		–	
> HS-DSCH Initial Capacity Allocation	O		9.2.1.31Ha		–	
<b>HS-SCCH Specific Information Response</b>		<i>0..&lt;max NoOfHS SCCHcodes&gt;</i>		Not applicable to 1.28 Mcps TDD	GLOBAL	reject
>Time Slot	M		9.2.3.23		–	
>Midamble Shift And Burst Type	M		9.2.3.7		–	
>TDD Channelisation Code	M		9.2.3.19		–	
<b>&gt;HS-SICH Information</b>		<i>1</i>			–	
>>HS SICH ID	M		9.2.3.5Gb		–	
>>Time Slot	M		9.2.3.23		–	
>>Midamble Shift And Burst Type	M		9.2.3.7		–	
>>TDD Channelisation Code	M		9.2.3.19		–	
<b>HS-SCCH Specific Information Response LCR</b>		<i>0..&lt;max NoOfHS SCCHcodes&gt;</i>		Not applicable to 3.84 Mcps TDD	GLOBAL	reject
>Time Slot LCR	M		9.2.3.24A		–	
>Midamble Shift LCR	M		9.2.3.7A		–	
>First TDD Channelisation Code	M		TDD Channelisation Code 9.2.3.19		–	
>Second TDD Channelisation Code	M		TDD Channelisation Code 9.2.3.19		–	
<b>&gt;HS-SICH Information LCR</b>		<i>1</i>			–	
>>HS SICH ID	M		9.2.3.5Gb		–	
>>Time Slot LCR	M		9.2.3.24A		–	
>>Midamble Shift LCR	M		9.2.3.7A		–	
>>TDD Channelisation Code	M		9.2.3.19		–	
<b>CHOICE HARQ Memory Partitioning</b>	O				–	
> <i>Implicit</i>					–	
>>Number of Processes	M		INTEGER (1..8,...)	For HARQ process IDs going from 0 to "Number of Processes" – 1 the Total number of soft channel bits [33] is partitioned equally between all HARQ processes according to the rules in [18].	–	

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
>Explicit					–	
>>HARQ Memory Partitioning Information		1..<maxnoofHARQprocesses>		The first instance of the parameter corresponds to HARQ process with identifier 0, the second instance to HARQ process with identifier 1, and so on.	–	
>>>Process Memory Size	M		9.2.1.49D	See [18]	–	

Range Bound	Explanation
maxnoofMACdFlows	Maximum number of HS-DSCH MAC-d flows.
maxnoofHSSCCHcodes	Maximum number of HS-SCCH codes
maxnoofHARQprocesses	Maximum number of HARQ processes for one UE

### 9.2.3.5GA HS-DSCH TDD Update Information

The *HS-DSCH TDD Update Information* IE provides information for HS-DSCH to be updated. At least one IE shall be present.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
HS-SCCH Code Change Indicator	O		9.2.1.31K	
TDD ACK NACK Power Offset	O		9.2.3.18F	

### 9.2.3.5Ga HS-SCCH ID

The HS-SCCH ID identifies unambiguously a HS-SCCH and its paired HS-SICH within the set of HS-SCCHs.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
HS SCCH ID			INTEGER (0..31)	

### 9.2.3.5Gb HS-SICH ID

The HS-SICH ID identifies unambiguously a HS-SICH.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
HS SICH ID			INTEGER (0..31)	

### 9.2.3.5H IPDL TDD Parameters LCR

The *IPDL TDD Parameters LCR* IE provides information about IPDL to be applied for 1.28Mcps TDD when activated.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
IP SpacingTDD	M		ENUMERATED (30, 40, 50, 70, 100, ...)	See [21]
IP Start	M		INTEGER (0..4095)	See [21]
IP_Sub	M		ENUMERATED (First, Second,	See [21]

			Both)	
Burst Mode Parameters	O		9.2.1.5A	

### 9.2.3.6 Max PRACH Midamble Shift

Indicates the maximum number of Midamble shifts to be used in a cell.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Max PRACH Midamble Shift			ENUMERATED (4, 8,...)	

### 9.2.3.7 Midamble Shift And Burst Type

This information element indicates burst type and midamble allocation.

The 256 chip midamble supports 3 different time shifts, the 512 chips midamble may support 8 or even 16 time shifts.

Three different midamble allocation schemes exist:

Default midamble: the midamble is allocated by layer 1 depending on the associated channelisation code (DL and UL)

Common midamble: the midamble is allocated by layer 1 depending on the number of channelisation codes (possible in DL only)

UE specific midamble: a UE specific midamble is explicitly assigned (DL and UL)

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
CHOICE <i>Burst Type</i>				
> <i>Type1</i>				
>>Midamble Configuration Burst Type 1 And 3	M		INTEGER (4, 8, 16)	As defined in [19]
>>CHOICE <i>Midamble Allocation Mode</i>	M			
>>>Default <i>Midamble</i>			NULL	
>>>Common <i>Midamble</i>			NULL	
>>>UE Specific <i>Midamble</i>				
>>Midamble Shift Long	M		INTEGER (0..15)	
> <i>Type2</i>				
>>Midamble Configuration Burst Type 2	M		INTEGER (3,6)	As defined in [19]
>>CHOICE <i>Midamble Allocation Mode</i>	M			
>>>Default <i>Midamble</i>			NULL	
>>>Common <i>Midamble</i>			NULL	
>>>UE Specific <i>Midamble</i>				
>>Midamble Shift Short	M		INTEGER (0..5)	
> <i>Type3</i>				UL only
>>Midamble Configuration Burst Type 1 And 3	M		INTEGER (4, 8, 16)	As defined in [19]
>>CHOICE <i>Midamble Allocation Mode</i>	M			
>>>Default <i>Midamble</i>			NULL	
>>>UE Specific <i>Midamble</i>				
>>Midamble Shift Long	M		INTEGER (0..15)	

### 9.2.3.7A Midamble Shift LCR

This information element indicates midamble allocation in 1.28Mcps TDD.

Three different midamble allocation schemes exist:

Default midamble: the midamble is allocated by layer 1 depending on the associated channelisation code (DL and UL)

Common midamble: the midamble is allocated by layer 1 depending on the number of channelisation codes (possible in DL only)

UE specific midamble: a UE specific midamble is explicitly assigned (DL and UL)

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Midamble Allocation Mode	M		ENUMERATED ( Default midamble, Common midamble, UE specific midamble, ...)	
Midamble Shift Long	C-UE		INTEGER (0..15)	
Midamble Configuration LCR	M		ENUMERATED (2, 4, 6, 8, 10, 12, 14, 16, ...)	As defined in [19]

Condition	Explanation
UE	The IE shall be present if the <i>Midamble Allocation Mode</i> IE is set to "UE-specific midamble".

### 9.2.3.7B Number Of Cycles Per SFN Period

The *Number Of Cycles Per SFN Period* IE indicates the number of repetitions per SFN period where the same schedule shall apply.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Number Of Cycles Per SFN Period			ENUMERATED (1, 2, 4, 8, ..., 16, 32, 64)	

### 9.2.3.7C Number Of Repetitions Per Cycle Period

The *Number Of Repetitions Per Cycle Period* IE indicates the number of Sync frames per Cycle Length where the [3.84Mcps TDD - cell synchronisation bursts] [1.28Mcps TDD – Sync\_DL Codes] shall be transmitted or the cell synchronisation bursts from the neighbouring cells shall be measured.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Number Of Repetitions Per Cycle Period			INTEGER (2..10)	

### 9.2.3.7D Number Of Subcycles Per Cycle Period

The *Number Of Subcycles Per Cycle Period* IE indicates the number of subcycles within a Synchronisation Cycle. Within each subcycle, the same sequence of SYNC\_DL Code transmissions and receptions is performed.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Number Of Subcycles Per Cycle Period			INTEGER (1..16,...)	

### 9.2.3.8 Paging Indicator Length

The Paging Indicator Length indicates the number of symbols for Page Indication transmitted in one timeslot (see ref [19]).

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Paging Indicator Length			ENUMERATED (2, 4, 8,...)	

### 9.2.3.9 PCCPCH Power

The Primary CCPCH power is the power that shall be used for transmitting the P CCPCH in a cell. The P CCPCH power is the reference power in a TDD-cell. The reference point is the antenna connector. If Transmit Diversity is applied to the Primary CCPCH, the Primary CCPCH power is the linear sum of the power that is used for transmitting the Primary CCPCH on all branches.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
PCCPCH Power			INTEGER (-15..+40,...)	Unit: dBm Range: -15 ..+40 dBm Step: 0.1 dB

### 9.2.3.10 PDSCH ID

The PDSCH ID identifies unambiguously a PDSCH inside a cell.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
PDSCH ID			INTEGER (0..255)	

### 9.2.3.11 PDSCH Set ID

The PDSCH Set Id identifies unambiguously a PDSCH Set inside a cell.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
PDSCH Set ID			INTEGER (0..255)	See ref. [6]

### 9.2.3.11A Primary CCPCH RSCP

Received Signal Code Power is the received power on PCCPCH of the target cell after despreading. The reference point for the RSCP is the antenna connector at the UE, see ref. [5].

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Primary CCPCH RSCP			INTEGER (0..91)	According to mapping of the non-negative values in ref. [23].

### 9.2.3.11B Primary CCPCH RSCP Delta

Primary CCPCH RSCP Delta is the offset used to report the negative reporting range of P-CCPCH RSCP as per [23].

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Primary CCPCH RSCP Delta			INTEGER(-5..-1,...)	If present, the actual value of Primary CCPCH RSCP = Primary CCPCH RSCP Delta

### 9.2.3.12 PUSCH ID

The PUSCH ID identifies unambiguously a PUSCH inside a cell.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
PUSCH ID			INTEGER (0..255)	

### 9.2.3.13 PUSCH Set ID

The PUSCH Set ID identifies unambiguously a PUSCH Set inside a cell.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
PUSCH Set ID			INTEGER (0..255)	See ref. [6]

### 9.2.3.14 PRACH Midamble

The PRACH Midamble indicates if only the Basic Midamble Sequence or also the time-inverted Midamble Sequence is used.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
PRACH Midamble			ENUMERATED ( Inverted, Direct, ...)	

### 9.2.3.14A Reference Clock Availability

The *Reference Clock Availability* IE is used to indicate the presence and operating of a Reference Clock connected to a TDD cell for cell synchronisation purpose.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Reference Clock Availability			ENUMERATED ( Available, Not Available)	

### 9.2.3.14B Reference SFN Offset

The *Reference SFN Offset* IE indicates the number of frames the reference SFN shall be shifted compared to the SFN derived from the synchronisation port.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Reference SFN Offset			INTEGER (0..255)	



### 9.2.3.15 Repetition Length

The Repetition Length represents the number of consecutive Radio Frames inside a Repetition Period in which the same Time Slot is assigned to the same Physical Channel see ref. [18].

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Repetition Length			INTEGER (1..63)	

### 9.2.3.16 Repetition Period

The Repetition Period represents the number of consecutive Radio Frames after which the same assignment scheme of Time Slots to a Physical Channel is repeated. This means that if the Time Slot  $K$  is assigned to a physical channel in the Radio Frame  $J$ , it is assigned to the same physical channel also in all the Radio Frames  $J+n*Repetition\ Period$  (where  $n$  is an integer) see ref. [18].

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Repetition Period			ENUMERATED (1, 2, 4, 8, 16, 32, 64,...)	

### 9.2.3.17 SCH Time Slot

The *SCH Time Slot* IE represents the first time slot ( $k$ ) of a pair of time slots inside a Radio Frame that shall be assigned to the Physical Channel SCH. The *SCH Time Slot* IE is only applicable if the value of *Sync Case* IE is Case 2 since in this case the SCH is allocated in TS# $k$  and TS# $k+8$ .

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
SCH Time Slot			INTEGER (0..6)	

### 9.2.3.18 Sync Case

The SCH and PCCPCH are mapped on one or two downlink slots per frame. There are two cases of SCH and PCCPCH allocation as follows:

- Case 1) SCH and PCCPCH allocated in a single TS# $k$
- Case 2) SCH allocated in two TS: TS# $k$  and TS# $k+8$   
PCCPCH allocated in TS# $k$

[1.28Mcps TDD - There is no Sync Case indication needed for 1.28Mcps TDD. If the *Sync Case* IE must be included in a message from CRNC to Node B used for 1.28Mcps TDD, the CRNC should indicate Sync Case 1 and the Node B shall ignore it.]

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Sync Case			INTEGER (1..2,...)	

### 9.2.3.18A Special Burst Scheduling

The number of frames between special burst transmissions during DTX.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Special Burst Scheduling			INTEGER (1..256)	Number of frames between special burst transmission during DTX

### 9.2.3.18B SYNC\_DL Code ID

The SYNC\_DL Code ID identifies the SYNC\_DL Code which used by DwPCH.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
SYNC_DL Code ID			INTEGER (1..32,...)	

### 9.2.3.18C Sync Frame Number

The *Sync Frame Number* IE indicates the number of the Sync frame within a Synchronisation Cycle or Subcycle, respectively, where the cell synchronisation bursts shall be transmitted or the cell synchronisation bursts from the neighbouring cells shall be measured.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Sync Frame Number			INTEGER (1..10)	

### 9.2.3.18D Synchronisation Report Characteristics

The *Synchronisation Report Characteristics* IE defines how the reporting on measured [3.84Mcps TDD - cell synchronisation bursts] [1.28Mcps TDD – Sync\_DL Codes] shall be performed

Different methods shall apply for the measured [3.84Mcps TDD - cell synchronisation burst] [1.28Mcps TDD – Sync\_DL Codes] reports. [3.84Mcps TDD - In the frequency acquisition phase the measurement report shall be sent when the frequency locking is completed.] In the initial phase and for the measurement on late-entrant cells an immediate report after the measured frame is expected.

In the steady-state phase measurement reports may be given after every measured frame, after every SFN period, after every cycle length or only when the requested threshold is exceeded.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Synchronisation Report Characteristics Type	M		ENUMERATED ( Frame related, SFN period related, Cycle length related, Threshold exceeding, Frequency Acquisition completed, ...)	
<b>Threshold Exceeding</b>	C-Threshold Exceeding			Applies only to the Steady State Phase
<b>&gt;Cell Sync Burst Threshold Information</b>		0..<maxno ofCellSync Bursts>		Mandatory for 3.84Mcps TDD. Not Applicable to 1.28Mcps TDD.
>>Sync Frame Number To Receive	M		Sync Frame Number 9.2.3.18C	
<b>&gt;&gt;Cell Sync Burst Information</b>		1..<maxno ofreceptio nsperSync Frame>		
>>>Cell Sync Burst Code	M		9.2.3.4G	

>>>Cell Sync Burst Code Shift	M		9.2.3.4H	
>>>Cell Sync Burst Arrival Time	O		Cell Sync Burst Timing 9.2.3.4L	
>>>Cell Sync Burst Timing Threshold	O		9.2.3.4M	
>SYNC_DL Code Threshold Information LCR		<i>0..&lt;maxno ofSyncFramesLCR&gt;</i>		Mandatory for 1.28Mcps TDD. Not Applicable to 3.84Mcps TDD.
>>Sync Frame Number To Receive	M		Sync Frame Number 9.2.3.18C	
>>SYNC_DL Code Information LCR		<i>1..&lt;maxno ofreceptionsperSyncFrameLCR&gt;</i>		
>>>SYNC_DL Code ID	M		9.2.3.18B	
>>>SYNC_DL Code ID Arrival Time	O		Cell Sync Burst Timing LCR 9.2.3.4La	
>>>SYNC_DL Code ID Timing Threshold	O		Cell Sync Burst Timing Threshold 9.2.3.4M	

Range Bound	Explanation
<i>maxnoofCellSyncBursts</i>	Maximum number of cell synchronisation burst per cycle for 3.84Mcps TDD
<i>maxnoofreceptionsperSyncFrame</i>	Maximum number of cell synchronisation burst receptions per Sync Frame for 3.84Mcps TDD
<i>maxnoofSyncFramesLCR</i>	Maximum number of SYNC Frames per repetition period for 1.28Mcps TDD
<i>maxnoofreceptionsperSyncFrameLCR</i>	Maximum number of SYNC_DL Code ID receptions per Sync Frame for 1.28Mcps TDD

### 9.2.3.18E Synchronisation Report Type

The *Synchronisation Report Type* IE represents the individual types of synchronisation reports that shall apply within the individual synchronisation phases. (see [17]).

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Synchronisation Report Type			ENUMERATED (Initial Phase, Steady-State Phase, Late-Entrant Cell, Frequency Acquisition, ...)	

### 9.2.3.18F TDD ACK NACK Power Offset

The *TDD ACK NACK Power Offset* IE indicates Power offset used in the UL in the HS-SICH between transmissions carrying positive and negative acknowledgements as per [18].

IE/Group Name	Presence	Range	IE type and reference	Semantics description
TDD ACK NACK Power Offset			INTEGER (-7..8,...)	Unit: dB Range: -7..+8 dB Step: 1 dB

### 9.2.3.19 TDD Channelisation Code

The Channelisation Code Number indicates which Channelisation Code is used for a given Physical Channel. In TDD the Channelisation Code is an Orthogonal Variable Spreading Factor code, that can have a spreading factor of 1, 2, 4, 8 or 16.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
TDD Channelisation Code			ENUMERATED ( (1/1), (2/1), (2/2), (4/1), .. (4/4), (8/1), .. (8/8), (16/1), .. (16/16),...)	

### 9.2.3.19a TDD Channelisation Code LCR

The Channelisation Code Number indicates which Channelisation Code is used for a given Physical Channel. In 1.28Mcps TDD the Channelisation Code is an Orthogonal Variable Spreading Factor code, that can have a spreading factor of 1, 2, 4, 8 or 16 and there is a choice between QPSK and 8PSK modulation.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
TDD Channelisation Code			9.2.3.19	
Modulation			ENUMERATED (QPSK, 8PSK,...)	Modulation options for 1.28Mcps TDD in contrast to 3.84Mcps TDD

### 9.2.3.19A TDD DPCH Offset

The Offset represents the phase information for the allocation of a group of dedicated physical channels. The *Offset Type* IE = "No Initial Offset" is used when a starting offset is not required and the TDD Physical channel offset for each DPCH in the CCTrCH shall be directly determined from the TDD DPCH Offset. The *Offset Type* IE = "Initial Offset" is used when a starting offset is required. The TDD DPCH Offset shall map to the CFN and the TDD Physical Channel Offset for each DPCH in this CCTrCH shall be calculated by TDD DPCH Offset *mod* Repetition period, see ref. [18].

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
CHOICE <i>Offset Type</i>				
> <i>Initial Offset</i>				
>>TDD DPCH Offset Value	M		INTEGER (0..255)	
> <i>No Initial Offset</i>				
>>TDD DPCH Offset Value	M		INTEGER (0..63)	

### 9.2.3.19B TDD DL Code Information

The *TDD DL Code Information* IE provides DL Code information for the RL.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
TDD DL Code Information		1..<maxno ofDPCHs>		
>DPCH ID	M		9.2.3.5	
>TDD Channelisation Code	M		9.2.3.19	

Range Bound	Explanation
maxnoofDPCHs	Maximum number of DPCHs in one CCTrCH

## 9.2.3.19C TDD DL Code Information LCR

The *TDD DL Code Information LCR* IE provides DL Code information for the RL.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
<b>TDD DL Code Information LCR</b>		<i>1..&lt;maxno ofDPCHsLCR&gt;</i>		
>DPCH ID	M		9.2.3.5	
>TDD Channelisation Code LCR	M		9.2.3.19a	
>TDD DL DPCH Time Slot Format LCR	M		9.2.3.19D	

Range Bound	Explanation
<i>maxnoofDPCHsLCR</i>	Maximum number of DPCH in one CCTrCH for 1.28Mcps TDD

## 9.2.3.19D TDD DL DPCH Time Slot Format LCR

TDD DL DPCH Time Slot Format LCR indicates the time slot formats used in DL DPCH for 1.28Mcps TDD (see ref. [19]).

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
<i>CHOICE Modulation</i>	M			
>QPSK				
>>QPSK TDD DL DPCH Time Slot Format LCR	M		INTEGER (0..24,...)	
>8PSK				
>>8PSK TDD DL DPCH Time Slot Format LCR	M		INTEGER (0..24,...)	

## 9.2.3.20 TDD Physical Channel Offset

The Offset represents the phase information for the allocation of a physical channel. (SFN mod Repetition Period = Offset) see ref. [18].

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
TDD Physical Channel Offset			INTEGER (0..63)	

## 9.2.3.21 TDD TPC DL Step Size

This parameter indicates step size for the DL power adjustment (see ref. [21]).

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
TDD TPC Downlink Step Size			ENUMERATED (1, 2, 3,...)	Unit: dB

## 9.2.3.21a TDD TPC UL Step Size

This parameter indicates step size for the UL power adjustment (see ref. [21]).

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
TDD TPC Uplink Step Size			ENUMERATED (1, 2, 3,...)	Unit: dB

### 9.2.3.21A TDD UL Code Information

The *TDD UL Code Information* IE provides information for UL Code to be established.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
<b>TDD UL Code Information</b>		1..<maxno ofDPCHs>		
>DPCH ID	M		9.2.3.5	
>TDD Channelisation Code	M		9.2.3.19	

Range Bound	Explanation
maxnoofDPCHs	Maximum number of DPCHs in one CCTrCH

### 9.2.3.21B TDD UL Code Information LCR

The *TDD UL Code Information LCR* IE provides information for UL Code to be established.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
<b>TDD UL Code Information LCR</b>		1..<maxno ofDPCHsLCR>		
>DPCH ID	M		9.2.3.5	
>TDD Channelisation Code LCR	M		9.2.3.19a	
>TDD UL DPCH Time Slot Format LCR	M		9.2.3.21C	

Range Bound	Explanation
maxnoofDPCHsLCR	Maximum number of DPCHs in one CCTrCH for 1.28Mcps TDD

### 9.2.3.21C TDD UL DPCH Time Slot Format LCR

TDD UL DPCH Time Slot Format LCR indicates the time slot formats used in UL DPCH for 1.28Mcps TDD (see ref. [19]).

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
CHOICE <i>Modulation</i>	M			
>QPSK				
>>QPSK TDD UL DPCH Time Slot Format LCR	M		INTEGER (0..69,...)	
>8PSK				
>>8PSK TDD UL DPCH Time Slot Format LCR	M		INTEGER (0..24,...)	

### 9.2.3.22 TFCI Coding

The TFCI Coding describes the way how the TFCI bits are coded. By default 1 TFCI bit is coded with 4 bits, 2 TFCI bits are coded with 8 bits, 3-5 TFCI bits are coded with 16 bits and 6-10 TFCI bits are coded with 32 bits.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
TFCI Coding			ENUMERATED (4, 8, 16, 32,...)	

### 9.2.3.22a Timing Adjustment Value

The *Timing Adjustment Value* IE indicates the timing correction within a Frame for 3.84Mcps TDD. Type 1 is used for the initial phase of Node B synchronisation. Type 2 is used for the steady-state phase of Node B synchronisation.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
CHOICE <i>Phase</i>				According to mapping in [23]
> <i>Initial Phase</i>				
>>Timing Adjustment Value	M		INTEGER (0..1048575,...)	
> <i>Steady State Phase</i>				
>>Timing Adjustment Value	M		INTEGER (0..255,...)	

### 9.2.3.22b Timing Adjustment Value LCR

The *Timing Adjustment Value LCR* IE indicates the timing correction within a Frame for 1.28Mcps TDD. Type 1 is used for the initial phase of Node B synchronisation. Type 2 is used for the steady-state phase of Node B synchronisation.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
CHOICE <i>Phase</i>				According to mapping in [23]
> <i>Initial Phase</i>				
>>Timing Adjustment Value	M		INTEGER (0..524287,...)	
> <i>Steady State Phase</i>				
>>Timing Adjustment Value	M		INTEGER (0..127,...)	

### 9.2.3.22A Timing Advance Applied

Defines the need for Rx Timing Deviation measurement results to be reported in a particular cell.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Timing Advance Applied			ENUMERATED (Yes, No)	

### 9.2.3.23 Time Slot

The Time Slot represents the minimum time interval inside a Radio Frame that can be assigned to a Physical Channel.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Time Slot			INTEGER (0..14)	

### 9.2.3.24 Time Slot Direction

This parameter indicates whether the TS in the cell is used in Uplink or Downlink direction.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Time Slot Direction			ENUMERATED (UL, DL, ...)	

### 9.2.3.24A Time Slot LCR

The Time Slot LCR is the number of the traffic time slot within a 5 ms subframe of LCR TDD.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Time Slot LCR			INTEGER (0..6)	

### 9.2.3.25 Time Slot Status

This parameter indicates whether the TS in the cell is active or not.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Time Slot Status			ENUMERATED (Active, Not Active, ...)	

### 9.2.3.26 Transmission Diversity Applied

Defines if Transmission Diversity on physical channels that may use closed loop transmit diversity is to be applied in a cell (see ref. [19]).

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Transmission Diversity Applied			BOOLEAN	True: Transmission Diversity shall be applied in this Cell. False: Transmission Diversity shall not be applied in this Cell.

### 9.2.3.26A UL Timeslot ISCP

UL Timeslot ISCP is the measured interference in a uplink timeslot at the Node B, see ref. [5].

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
UL Timeslot ISCP			INTEGER (0..127)	According to mapping in [23].

### 9.2.3.26B UL PhysCH SF Variation

Indicates whether variation of SF in UL is supported by Radio Link or not.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
UL PhysCH SF Variation			ENUMERATED (SF_Variation_supported, SF_Variation_NOT_supported)	



## 9.2.3.26C UL Timeslot Information

The *UL Timeslot Information* IE provides information on the time slot allocation for an UL DPCH.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
<b>UL Timeslot Information</b>		1..<maxno ofULts>		
>Time Slot	M		9.2.3.23	
>Midamble Shift And Burst Type	M		9.2.3.7	
>TFCI Presence	M		9.2.1.57	
>UL Code Information	M		TDD UL Code Information 9.2.3.21A	

Range Bound	Explanation
maxnoofULts	Maximum number of Uplink time slots per Radio Link

## 9.2.3.26D UL Time Slot ISCP Info

The *UL Time Slot ISCP Info* IE provides information for UL Interference level for each time slot within the Radio Link.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
<b>UL Time Slot ISCP Info</b>		1..<maxno ofULts>		
>Time Slot	M		9.2.3.23	
>UL Timeslot ISCP	M		9.2.3.26A	

Range Bound	Explanation
maxnoofULts	Maximum number of Uplink time slots per Radio Link

## 9.2.3.26E UL Timeslot Information LCR

The *UL Timeslot Information* IE provides information on the time slot allocation for an UL DPCH.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
<b>UL Timeslot Information LCR</b>		1..<maxno ofULtsLCR >		
>Time Slot LCR	M		9.2.3.24A	
>Midamble Shift LCR	M		9.2.3.7A	
>TFCI Presence	M		9.2.1.57	
>UL Code Information	M		TDD UL Code Information LCR 9.2.3.21B	

Range Bound	Explanation
maxnoofULtsLCR	Maximum number of Uplink time slots per Radio Link for 1.28Mcps TDD.

## 9.2.3.26F UL Time Slot ISCP Info LCR

The *UL Time Slot ISCP Info LCR* IE provides information for UL Interference level for each time slot within the Radio Link.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
UL Time Slot ISCP Info LCR		1..<maxno ofULtsLCR >		
>Time Slot LCR	M		9.2.3.24A	
>UL Timeslot ISCP	M		9.2.3.26A	

Range Bound	Explanation
maxnoofULtsLCR	Maximum number of Uplink time slots per Radio Link for 1.28Mcps TDD

## 9.2.3.26G Uplink Synchronisation Frequency

The *UL Synchronisation Frequency* IE specifies the frequency of the adjustment of the uplink transmission timing.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Uplink Synchronisation Frequency			INTEGER (1..8)	Unit: subframe Step: 1

## 9.2.3.26H Uplink Synchronisation Step Size

The *UL Synchronisation Step Size* IE specifies the step size to be used for the adjustment of the uplink transmission timing.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
Uplink Synchronisation Step Size			INTEGER (1..8)	Unit: 1/8 chip Step: 1.

## 9.2.3.27 USCH ID

The USCH ID uniquely identifies a USCH within a Node B Communication Context.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
USCH ID			INTEGER (0..255)	

## 9.2.3.28 USCH Information

The *USCH Information* IE provides information for USCHs to be established.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description	Criticality	Assigned Criticality
<b>USCH Information</b>		<i>1..&lt;maxnoofUSCHs&gt;</i>			–	
>USCH ID	M		9.2.3.27		–	
>CCTrCH ID	M		9.2.3.3	UL CCTrCH in which the USCH is mapped	–	
>Transport Format Set	M		9.2.1.59	For USCH	–	
>Allocation/Retention Priority	M		9.2.1.1A		–	
>Binding ID	O		9.2.1.4	Shall be ignored if bearer establishment with ALCAP.	YES	ignore
>Transport Layer Address	O		9.2.1.63	Shall be ignored if bearer establishment with ALCAP.	YES	ignore
>TNL QoS	O		9.2.1.58A		YES	ignore

Range Bound	Explanation
<i>maxnoofUSCHs</i>	Maximum number of USCHs for one UE

### 9.2.3.29 USCH Information Response

The *USCH Information Response* IE provides information for USCHs that have been established or modified.

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
<b>USCH Information Response</b>		<i>1..&lt;maxnoofUSCHs&gt;</i>		
>USCH ID	M		9.2.3.27	
>Binding ID	O		9.2.1.4	
>Transport Layer Address	O		9.2.1.63	

Range Bound	Explanation
<i>maxnoofUSCHs</i>	Maximum number of USCHs for one UE

### 9.2.3.30 SCTD Indicator

Indicates if SCTD antenna diversity is applied or not to beacon channels (see ref. [19]).

IE/Group Name	Presence	Range	IE Type and Reference	Semantics Description
SCTD Indicator			ENUMERATED (active, inactive)	